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Moche Geopolitical Networks and the Dynamic Role of Licapa II, Chicama Valley, Peru

Abstract

This dissertation examines Moche (A.D. 300-900) sociopolitical organization in northern Peru at the previously unexplored site of Licapa II, a mid-sized ceremonial center in the Chicama Valley. Moche's distinct archaeological signatures, chiefly, ceramics and architecture, have long been seen as emblematic of an ethnic and political reality and defined as evidence for the first South American state although recent scholarship has begun to view Moche as a more complex mosaic of interacting settlements across a landscape. My research at Licapa II is the first study of a site of its size and kind, thus constituting a novel contribution to the paradigm shift in Moche research. My excavations, surface collections, and geophysical surveys contributed to understanding the nature of the site and the activities performed there.

Licapa II consists of two pyramids (*huacas*), a canal, and other buildings. I show that the two major structures, Huaca A and Huaca B, are characterized by different material culture, are different in form, and date to different time periods. Huaca A has local ceramics and was mainly used before A.D. 600. Huaca B has Moche IV and V style ceramics and was in use after A.D. 600.

Based on my evaluation of radiocarbon dates, the changes in buildings and ceramics seen at Licapa II around A.D. 600 also occurred throughout the Moche world and included the adoption of Moche IV ceramics and soon after, in some places, Moche

V. I also show that the Moche V style likely originated in the northern Chicama Valley and spread from there *circa* A.D. 650. I also argue that political organization in Moche times may have been similar to colonial era organization, based on nested moieties organized around the irrigation system.

Overall, in this dissertation I demonstrate that Licapa II was an independent center intimately connected to a dynamic landscape of interconnected nodes in an ever-changing and complex network of sites. Simplistic models based on the concept of large Moche states thus should be discarded.

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# CHAPTER 1

## INTRODUCTION TO THE PROJECT OBJECTIVES

This project examines Moche (A.D. 300-900) sociopolitical organization in northern Peru through the investigation of the spatial organization, architectural layout, and artifact patterning at the previously unexplored site of Licapa II, a mid-sized ceremonial center in the Chicama Valley. By comparing material from Licapa II to other known Moche sites, my study is the first to explore both intersite and intrasite dynamics of a mid-sized Moche ceremonial center. In this introduction I briefly review the history of Moche studies and the general view of the Moche archaeological culture. I introduce the site of Licapa II and present the methodology I employed in my investigations there. I then discuss the theoretical background to my approach, which focuses on comparing ceramics and architecture from various settlements to elucidate the role of Licapa II in the Moche world.

The Moche civilization of the north coast of Peru is characterized by elaborately decorated temple complexes, wealthy elite burials, and exquisite ceramics found over ten valleys on the desert north coast of Peru (Figure 1.1). The Moche have long been considered the first state level society in South America (Bourget cited in Atwood 2010; Stanish 2001). Over the last 15 years, however, it has been established that Moche was not a single homogeneous entity (Castillo and Uceda 2008). Rather, it consisted of at least two major cultural regions, the northern region (Mochica Norte) and the southern region (Mochica Sur), separated by the large Pampa de Paiján desert (Figure 1.1). The northern region is currently viewed as a series of independent polities, whereas the southern region is considered by many to have been a single state, basically maintaining the earlier view of Moche statehood but with a contracted territory (Castillo and Donnan 1994a; Castillo and Uceda 2008). To date, few studies have conducted research with the aim of (1) uncovering the relationships between the two regions, or (2) addressing the role of different size settlements specifically in the southern region. The mid-sized ceremonial center of Licapa II, at the northern edge of the southern Moche realm in the Chicama Valley, presents an ideal test site to investigate these two major issues.

The goal of my project is to examine Moche sociopolitical organization in terms of both inter- and intra-regional relations from the perspective of the mid-sized center of Licapa II. This goal was pursued through the examination of architecture and ceramics from Licapa II compared to other Moche centers, including the two large and presumably dominant southern Moche centers of Huacas de Moche in the Moche Valley and El Brujo in the Chicama Valley, and the northern cemetery site of San José de Moro (Figure 1.1). I conducted a ceramic surface collection, ground-penetrating radar survey, and excavations at Licapa II to obtain these comparative datasets. Radiocarbon dating provides temporal contextualization. I also undertook a petrographic study of fine diagnostic ceramics from these centers to understand if material composition and manufacturing techniques relate to regional variability in ceramic styles that have been recently worked out based on different surface decorations (Castillo 2001; Donnan 2007; Donnan and McClelland 1999; McClelland et al. 2007). I combined these data to determine if patterns in the distribution of ceramics can be detected and used to define relationships between Moche centers.

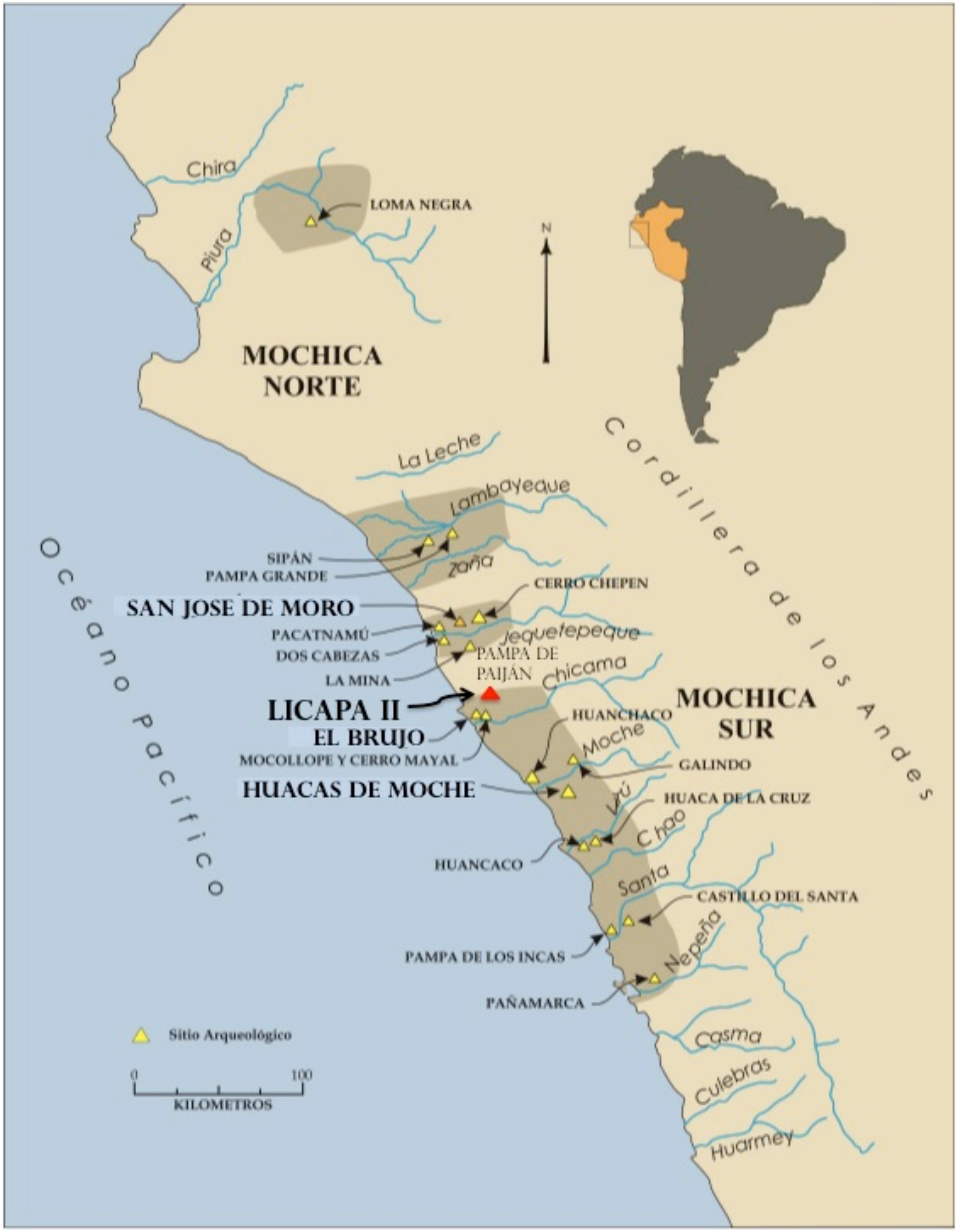


**Figure 1.1: Map of the North Coast of Peru showing the northern (Mochica Norte) and southern (Mochica Sur) Moche regions. Licapa II is located in the northern portion of the southern Moche realm (After Castillo and Uceda 2008).**

The majority of the information available on the Moche is derived from the study of unprovenienced artifacts, mostly cream and red fine ware ceramics (see Figure 1.2) (Benson 1972; Bourget 2006; Donnan 1978; Donnan 2004; McClelland et al. 2007; Donnan and McClelland 1999; Hocquenghem 1987; Quilter 1990, 1997) and long-term excavations at Huacas de Moche, El Brujo, and San José de Moro (Bourget 2001; Castillo 2001; Castillo and Donnan 1994a; Chapdelaine 2001; Franco et al. 1994; Mujica 2007; Uceda 2001, 2010; Uceda and Tufinio 2003; Verano 2001). Licapa II is a smaller dual *huaca* (pyramid) center with many of the architectural characteristics of the southern centers of El Brujo and Huacas de Moche. This includes a cemetery, smaller buildings, and a residential area. My research at Licapa II clarifies the relationship between different sized Moche centers at both local (valley) and regional (inter-valley) levels and addresses how people residing at this smaller center were integrated into Moche society.

Working within the framework that similarities in artifact styles denote affiliations between sites (Plog 1976; Rice 1987; A. Smith 2003), prior to my fieldwork I hypothesized that artifact and architectural patterning would suggest three possible scenarios or models for the role of Licapa II. (1) The Dependence Model: if the artifacts and architectural styles at Licapa II are the same in all respects to those found at El Brujo and Huacas de Moche, then Licapa II was likely a secondary center to either El Brujo, Huacas de Moche, or both. This first model would suggest that there was an overarching political system such as the state, even though organizational variability is known for state systems. (2) The Independence Model: if artifact and architectural styles at Licapa II were distinctly unique, then this would suggest that Licapa II was independent and challenge the validity of the southern Moche state. (3) The Dynamic Model: if artifact and architectural styles at Licapa II have characteristics seen in both the north and the south, as well as unique styles, then we need to reevaluate our understanding of the nature of the fluidity of Moche sociopolitical and economic dynamics, and redefine the currently accepted established boundaries that have been recently drawn between the north and south.

**A Brief History of Moche Studies**

In order to evaluate Moche political organization from the archaeological record of a mid-sized ceremonial center, we first must understand the history and development of Moche studies. Scholars once believed the Moche were a homogenous polity, as proposed by Rafael Larco Hoyle (Larco 1945). He envisioned a central authority located in a "heartland" (the Chicama and Moche Valleys). This polity used warfare and religion to maintain control over the populations of other coastal valleys (Larco 2001:185–196). Work by Willey (1953), Strong and Evans (1952), the Harvard Chan Chan Moche Valley Project (Moseley and Day 1982), and Wilson (1988) in areas south of the Moche Valley reinforced Larco's vision of a unified Moche, and led to the development of models that saw the Moche as a single conquest state.

Larco's pioneering interpretations, including his five-phase ceramic sequence (Moche I-V) (Larco 1948), remain influential. However, research in the last two decades has called into question the single-state model (Bawden 1996; Castillo 2001; Castillo and Donnan 1994a; Castillo and Uceda 2008; Chapdelaine 2001; Lockard 2005, 2009; Quilter 2002; Shimada 1994, 2010; Swenson 2004). Research throughout the 1990s helped to better define the northern and southern Moche realms (Castillo and Donnan 1994a; Castillo 2001, 2003; Shimada 1994), and even more recently Castillo (2010) and

Swenson (Swenson 2004, 2007, 2011a) have refined the notion of the Northern Moche. They suggest that the Jequetepeque Valley was composed of a series of independent polities, which, although distinct politically, incorporated similar ceremonial and ritual practices. Ceramic and architectural data support their argument. Investigations at sites such as San José de Moro have demonstrated that Larco's five-phase ceramic sequence does not work well for the northern valleys, so scholars have adopted a revised three-stage (Early, Middle, Late) ceramic chronological sequence (Castillo 2001) (Figure 1.2). In the following chapters, I will elaborate upon the history of Moche studies as well as the variations in northern vs. southern Moche styles.

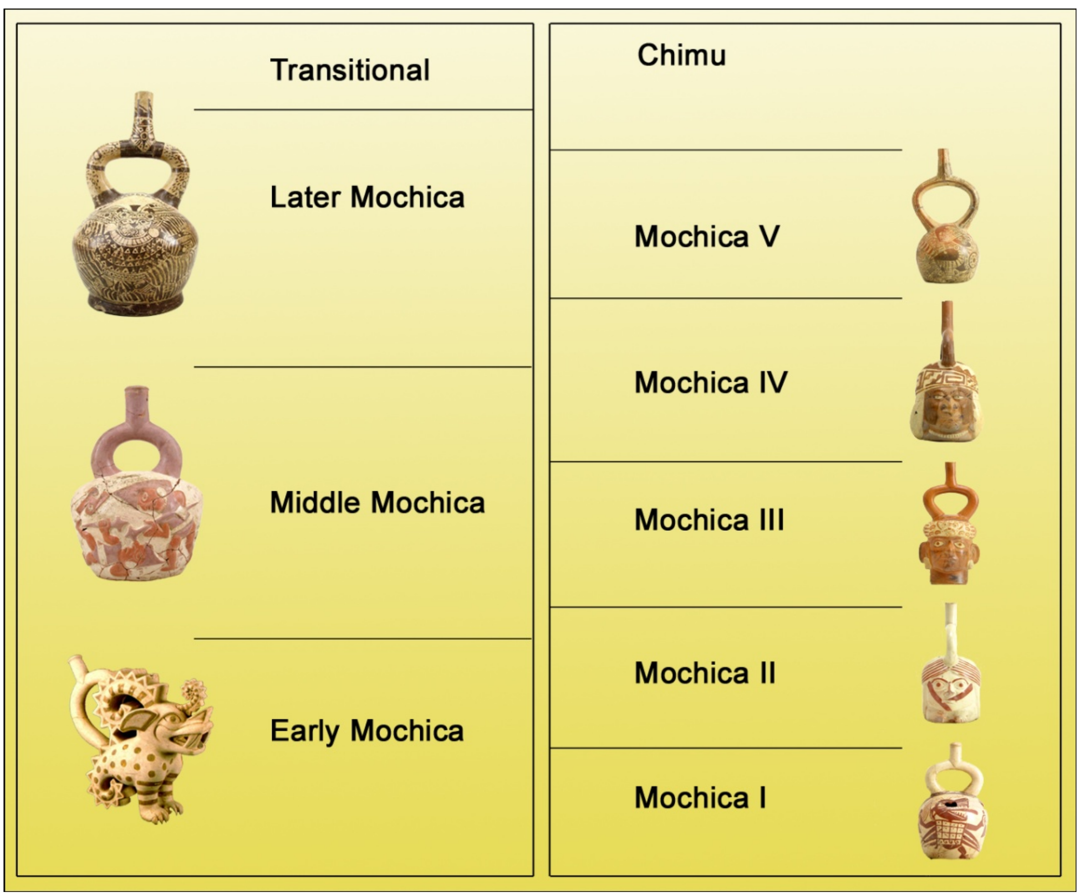


**Figure 1.2: Left: the northern Moche sequence. Right: the original Larco 1948 five-phase sequence and currently accepted southern Moche sequence (courtesy of Luis Jaime Castillo)**

Although over the past several years our understanding of the Northern Moche has become more complex, many still view the Southern Moche as a monolithic conquest polity, or a state. This theory is based primarily upon evidence from large huaca centers in the heartland, and large satellite Moche settlements, such as Guadalupito in the Santa Valley to the south (Chapdelaine 2010; Mujica 2007; Uceda 2010). Recently, however, the notion of the Southern State has been challenged and contested (Millaire 2010; Quilter and Koons 2012).

Although a more complex view of the Moche is currently being developed, a crucial part of the Moche settlement hierarchy remains unstudied: the role that smaller ceremonial-administrative sites played in relation to the larger centers. As it stands, it is still unclear whether the concept of an expansive state still holds for the southern Moche region, or whether this region should also be seen as a complex mosaic of separate entities. My work examines and clarifies this issue by examining one of the smaller centers of this region, Licapa II.

## Broad View of the Moche Archaeological Culture

Moche Origins

Moche emerged sometime around 250-300 AD from the poorly understood Salinar (200 BCE- 200 AD) archaeological culture. Salinar, and later Moche both had their roots in the Cupisnique (~1000-300 BCE) archaeological culture. Uceda (2010) notes that the gods and deities that decorate Moche murals and portable art during the early phases of Moche are direct antecedents of Cupisnique deities, which shows a long continuity of some aspects of the religious tradition on the north coast of Peru. The emergence of Moche will be further discussed in Chapter 2.

Art, Architecture, and Iconography

Moche material culture is spread over ten river valleys from the Nepeña Valley in the south to Piura on the far northern coast of Peru. Recently, however, scholars have found Moche materials as far south as the Huarmey Valley (Makowski 2010). The heartland of Moche cultural development is in the Moche and Chicama Valleys, where the majority of artifacts have been recovered and sites have been identified (Billman 1996; Larco 2001). The most notable Moche artifacts are fine ware ceramics with distinctive forms and designs, such as stirrup spout bottles and *floreros* (flaring rim bowls), as well as metal objects, such as silver and gold-copper alloy jewelry and regalia, all executed in generally similar styles. The distinctive art style in which these objects were rendered has identified them as Moche (see Figure 1.2).

Additionally, large adobe huacas, many decorated with elaborate polychrome murals, served as key structures in ceremonial centers and are considered essential aspects of Moche material culture. Huacas are found in almost every north coast valley and have been seen as a symbol of Moche power. These structures can be as small as ten meters across and only a few meters high, or as large as Huaca del Sol at the site of Huacas de Moche that once was 300 meters across and over 50 meters high (Figure 1.3).

**Figure 1.3: A view of the Huaca del Sol looking northwest from the Huaca de la Luna (Photo courtesy of Jeffery Quilter).**

Moche is also understood by a series of inferred ritual practices that took place at these huaca centers. These include funerary rites, ritual (and real) warfare or combats, and sacrifice ceremonies involving slaying captive prisoners and presenting their blood to high priests or rulers. These ritual practices are mostly understood from detailed realistic painting, known as fineline painting, seen on Moche ceramic vessels (Figure 1.4). Archaeological evidence has also uncovered remains of these practices in the form of elaborate tombs at huaca centers of individuals wearing the regalia and accompanied by the accoutrements seen in the fineline drawings (Alva and Donnan 1993). This will be further discussed in Chapter 3.

**Figure 1.4: Fineline roll out drawing (right) of the Moche Sacrifice Ceremony. The fineline painting is on a stirrup-spout bottle (left; Courtesy of Jeffrey Quilter).**

<u>Economy</u>

The Moche subsistence economy consisted of hunting, fishing and the breeding of domesticated animals, such as *cuy* (guinea pig) and camelids (alpacas and llamas). Irrigation agriculture also allowed for the cultivation of a variety of crops including maize, beans, squash, peanuts, potatoes and chili peppers. The desert coast of Peru receives little rain and would be uninhabitable were it not for irrigation within the costal valleys. The north coast of Peru contains elaborate irrigation systems that were likely first developed during the Initial Period (1800-800 BCE) (Netherly 1984). Irrigation system management would thus have been a key factor in the functioning of Moche politics and society.

The Moche economy also relied on the trade of goods and supplying of services. In Inka times, the people were required to serve the ruler by providing a labor tax (D'Altroy 2002). It is possible that a similar system was in place in Moche times to service irrigation canals, construct monumental architecture, tend fields, and produce certain trade goods, such as metals and fine ceramics. Trade was also important between the coast and inland regions, as well as areas reachable by boat. Goods from the Amazon and Ecuador, such as *spondylus* shells, have been recovered at Moche sites indicating the extent of the trade networks.

El Niño and Collapse

The reasons behind the fall of the Moche around AD 900 remain unknown. However, many factors are thought to have played a part, both environmental and political. The north coast is subjected to periodic events of torrential rains and widespread flooding known as El Niño events. These events would undoubtedly have disrupted the irrigation system and caused major damage to settlements. El Niño events, although not in themselves the cause of societal collapse, they could have been a contributing factor in the erosion and downfall of elite authority during the late Moche period, as has been noted by many scholars (Moseley and Deeds 1982; Moseley et al. 2008; Shimada 1994). Throughout this dissertation, I will further explore the significance of El Niño events and their impact on Moche society.

## Licapa II

Licapa II is located on the southern skirt of Cerro Azul in the northern portion of the lower Chicama Valley. Through my work, done in collaboration with Dr. Jeffrey Quilter and Régulo Franco, the Peruvian *Instituto Nacional de Cultura* (INC) placed Licapa II on the national register of archaeological sites in 2009. The INC delineated an arbitrary area of 6.5km$^2$ in order to protect the site; however, the monumental core is only approximately 5 hectares (Figure 1.5). The monumental core consists of two huacas, Huaca A measuring 55 x 57 meters and 9 meters high, and Huaca B measuring 80 x 66 meters and 6-7 meters high. Huaca A is located 300 meters to the north of Huaca B, yet they are offset by an angle of 29 degrees. Between the huacas is a looted area that I determined to be residential in nature. Additionally, a canal dating to the Moche period runs through the site. To the west of both huacas is an area where two smaller buildings are located, locally called *montículos.* This area also contains a possible platform cemetery area and a possible storage facility (Figure 1.6). The results of our geophysical survey show that other structures once stood in this area, which will be discussed further in Chapter 4.

I chose to investigate this site for several important reasons. First, no investigations have ever been performed at smaller Moche ceremonial centers with the express interest of understanding their roles in the settlement system. Since Licapa II is located in the heartland of the Moche realm, it is an especially valuable site for such an investigation. Second, because Licapa II is a dual huaca center, it is comparable in architectural layout and huaca form to the large centers of Huacas de Moche and El Brujo, which is important because the majority of information on the Moche comes from these centers. By examining a smaller center in relation to the larger ones, we can learn a lot about political affiliations and the nature of power and control. Third, while doing preliminary surface reconnaissance between 2007 and 2009, I noted both southern and northern Moche styles of ceramics of the highest quality. I therefore hypothesized that by investigating Licapa II, I could learn more about the interactions that occurred between the northern and southern Moche realms. This is important because to date we have little data to understand how these two regions were related.

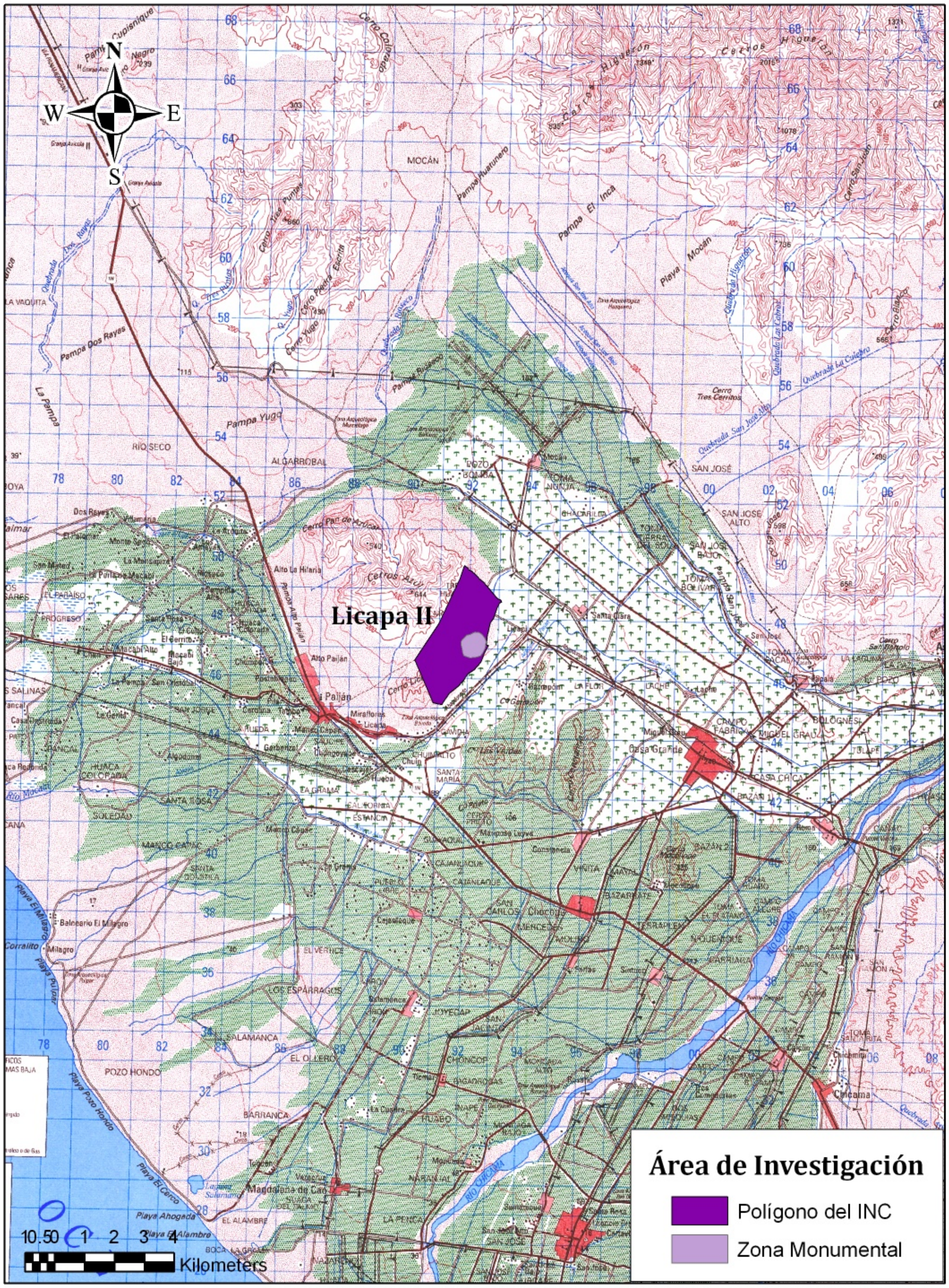


**Figure 1.5: Map of the Chicama Valley of Peru showing the INC polygon delineating the extent of the protected area and the monumental zone of Licapa II**

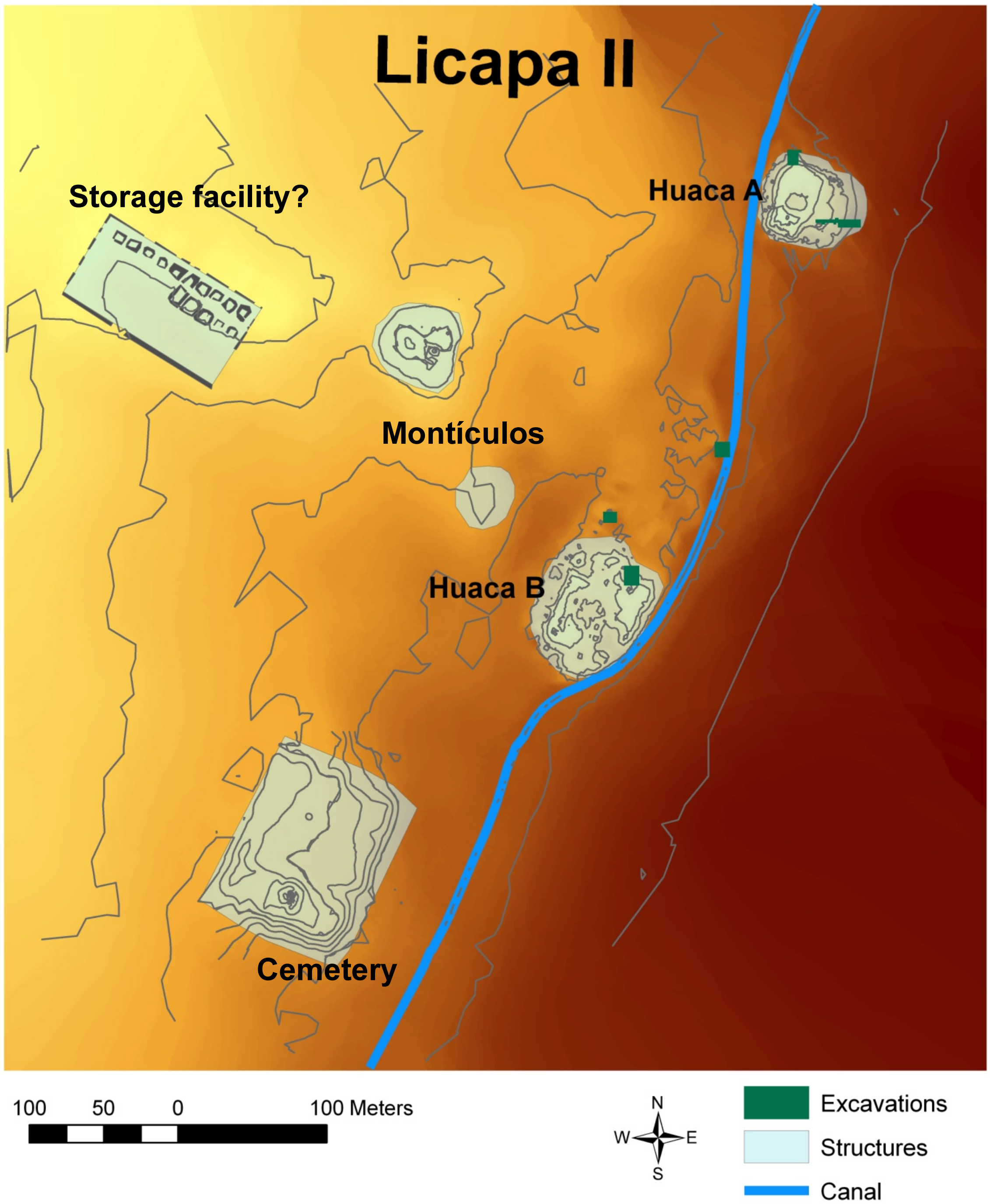


**Figure 1.6: The site of Licapa II**

## Methodology

My investigation at Licapa II focused on two kinds of primary data: architecture and ceramics from both disturbed and undisturbed contexts. The site, like many others in Peru, has been severely looted. However, my preliminary investigations from 2007 to 2009 suggested that enough archaeological features remained to justify a study of overall site layout and architectural chronology. Field research took place between March and June of 2010 and consisted of (1) creating a topographic map of all significant surface structures and features; (2) performing a gridded surface collection of ceramics; (3) undertaking magnetometry and ground-penetrating radar surveys; and (4) excavating in five locations across the site. These included excavations on Huaca A, Huaca B and in between the two huacas.

Laboratory work took place between June and September of 2010 and consisted of cataloging all artifacts found on the site. Special attention was paid to the 7,450 ceramic fragments collected; each was photographed and analyzed for 39 distinct attributes, which will be described in Chapter 5. Petrographic thin sections were made from 75 of these sherds for comparisons to one another and to ceramics from El Brujo, Huacas de Moche, San José de Moro and Cerro Mayal.

## Theoretical Background

### Moche Geopolitical Organization

The biggest problem in our understanding of Moche is that there is no definitively agreed upon criteria for what makes a site Moche. The application of the label to a site is largely based on the opinions of the researcher working there. I adopt a definition that Moche was primarily a religious phenomenon that was expressed through a shared set of symbols and messages presented on portable media and other art seen along the north coast of Peru between 300 and 900 AD[1]. Sites that engaged with these messages and symbols were likely participating in some way in the Moche ideology (Bawden 1996; Donnan 2010; Quilter 2010a). Therefore, a site from the same time period that did not use these symbols cannot be considered Moche. Even if Moche was primarily a religion[2], there was a political dimension to its functioning and spread. How power was distributed, reinforced, legitimized and practiced in the Moche world are therefore critical questions in understanding Moche authority. Examining these issues from the perspective of a smaller center is key to my research.

Moche has been considered the first state level society in South America based on the great wealth (gold jewelry and ornaments; human sacrifices), energy investments at large ceremonial centers (adobe constructions; murals and friezes), and an apparent widespread common style of material culture found on the north coast (Moseley 1992). Other factors, such as an emphasis on militarism and a standard religion, both seen in the iconography, and survey data that presumably show a marked settlement hierarchy, have also been assumed to identify the Moche as a state (cf. Quilter and Koons 2012). However, an increase in data over the last two decades has led scholars to question whether wealth at centers necessarily signifies an integrated single (or even dual) state system, whether the previously accepted/proposed uniform "corporate style" (Moseley 1992) really existed, and thus whether Moche can be viewed as a state (Castillo and Donnan 1994a; Castillo and Uceda 2008; Donnan 2007; Shimada 1994).

[1] This date range is different than the more commonly accepted date range of 0-800 AD. My use of this new date range is a result of a reevaluation of radiocarbon dates that will be explained in Chapter 8.
[2] Defining religion is complicated. Here I adopt a simplistic definition for a religion as an organized system of shared practices and beliefs concerning the natural and "supernatural" world.

Although this is an important topic that deserves detailed clarification, in my work it is less critical to determine whether or not Moche was a state, than it is to examine how the Moche phenomenon functioned from the perspective of a mid-sized site in an important and unstudied region: the northern Chicama Valley. To understand the way Moche worked – how power was distributed and which sites were affiliated with one another – my approach is to conduct comparative archaeological studies between sites to evaluate similarities and differences in ceramics, other artifacts, architecture, site planning, irrigation systems, systems of craft production, mortuary practices, and the size and placement sites on the physical landscape. Although we now know that Moche was not a homogenous culture based on the differences in material remains, data to determine how settlements of different sizes interacted are still lacking.

Whether one investigates the origins of complex societies (Morgan 1877; Fried 1967; Service 1975), their structural components and function (Yoffee 2005), or the utility of generalizing definitions (A. Smith 2003), one thing remains constant: complex societies are composed of settlements that vary in size and distribution. It is generally accepted in archaeology that within a settlement hierarchy, physical differences in size, architectural style, spatial layout, and the interaction that occurred between settlements are important factors for understanding the political structure of a society (Parsons 1972; Steponaitis 1981; Wright and Johnson 1975). Scholars have applied numerous models, analytical techniques, and theories to understand the interplay between contemporaneous settlements (Table 1.1).

**Table 1.1: Models, theories, and analytical techniques used for settlement pattern analyses and studies.**

| Models, Theories, and Analytical Techniques | Authors |
|---|---|
| Catchment analysis | (Flannery 1976; Jarman et al. 1972; Roper 1979; Vita-Finzi and Higgs 1970) |
| Rank size analysis | (Falconer and Savage 1995; Liu 1996; Kowalewski 1982) |
| Central place theory | (Conrad 1978; Crumley 1976; 1979; Johnson 1972; Marcus 1976) |
| World systems theory | (Algaze 2005; Blanton 1996; Smith and Berdan 2003; Wallerstein 1974) |
| Trade diaspora and distance-parity models | (Goldstein 2005; Stein 1999) |
| Peer polity interaction | (Cherry and Renfrew 1986) |
| Models of heterarchy | (Carole L. Crumley 1995) |
| City-state models | (Hansen 2000; Grube 2000; Millaire 2010) |

Valleys along the north coast of Peru have been subjected to settlement pattern surveys of varying intensities (Billman 1996; Dillehay 2001; Dillehay et al. 2009; Donnan 1973; Leonard and Russell 1992; Proulx 1968, 1973, 1985; Swenson 2004; Tschauner 2001; Willey 1953; Wilson 1988). These studies recognize that Moche was the first Peruvian archaeological culture that shows a clear and distinguishable settlement hierarchy on the landscape (cf. Shady 2006; Stanish 2001). However, intensive archaeological excavations have mainly focused on large primary centers in the north coast valleys (cf. Johnson 2008; Ringberg 2008; Russell and Jackson 2001; Swenson 2004). Such studies are thus generally site-centric and focused on relationships between large centers. Although numerous smaller secondary and tertiary centers have been identified and mapped in the process of surveys, to date no intensive archaeological research has been undertaken to examine the role that these centers played in the overall sociopolitical/ religious system, or whether the relative size of Moche centers is relevant to understanding societal organization.

When examining relationships between centers, M. Smith (2005) states that settlements in a political landscape constitute a series of interconnected nodes. If we view

Moche settlements as nodes in a network, similarities and differences in material culture between the varying settlements may be seen in more dynamic terms than if viewed simply as static, ranked centers in a site hierarchy. In my work, I seek to understand this network of settlements in terms of geopolitics, which refers to the links and relationships between political power and the geographical distribution of sites in space. It may also represent a body of thought to evaluate specific strategies based on the relative importance of land and sea power (Østerud 1988). Geopolitics are highly relevant to understanding Moche, as access to irrigation canals, the sea, and other economic resources were paramount to the societal function. Geopolitical relationships are manifest through the demonstration and demarcation of difference, similarity, hegemony, exclusion and inclusion, and are produced and reproduced on the landscape through the delineation of physical boundaries, such as walls and roads (A. Smith 2003). These relationships are also apparent through the adoption or rejection of certain types of material culture, and thus may be visible in the archaeological record. Accordingly, a powerful archaeological approach to examining the interconnectedness of settlement system nodes is to look at similarities and differences in the manifestations of monumentality between centers. A second approach is to examine the nature of craft production, consumption, and exchange. In my work I address site interconnectivity by comparing Moche architecture and fine ceramics from Licapa II to other Moche centers.

*Ethnographic Evidence*

At this point it is worth noting important ethnohistoric research on political organization that I draw upon as a heuristic device in my work. Susan Ramírez (1996, 2005) contends that at the time of contact, indigenous South Americans did not have the same concept of power, territory, or private property as the Spanish. Ramírez (2005) contends that it was the control of people, not land that constituted power for the Inka. She notes that there were boundaries, nonetheless, and that they were constantly in flux even though they were defined by kinship, ethnicity, and personal ties rather than by land ownership. Thus, while power may (or may not) have been conceived of in terms of people, there is evidence to suggest that land and boundaries to it did matter on the North Coast of Peru in both colonial and Moche times.

For the Chicama Valley, colonial documents demonstrate that the indigenous population was organized into a series of ranked and nested units known as *parcialidades,* which may have been organized into moieties (Netherly 1977, 1984; Ramírez 1995, 1996). At the top of the social hierarchy was the paramount lord (*cacique principal*) responsible for not only the entire polity but also the higher-ranking moiety of the dual moiety division (Figure 1.7). A second person (*segunda persona)* was in charge of the lower-ranking moiety of the polity. Under the *cacique* and the *segunda persona* were a series of lower-level lords referred to as *principales.* At the lowest level, the population was grouped based on economic specialization and placed under a local lord. The *principales,* or local lords, managed land and resources as well as their subjects. Commoners were required to pay tribute in the form of a labor tax (Conrad 1981; Netherly 1977; Sapp 2002). This usually required work in communal fields or the maintenance of the extensive irrigation systems that supported the fields, but it may also have entailed the production of specialized goods and the construction of monumental architecture (Tschauner 2001). The fruits of the tribute were sent to the local lord for his benefit and that of the higher-level lords above him. Susan Ramírez (1996:60) notes that although land was not owned and the concept of territory did not exist, at the time of conquest, huacas were nevertheless controlled by the *cacique principal* of a *parcialidad*, because the construction of a huaca was the result of labor the ruler commanded.

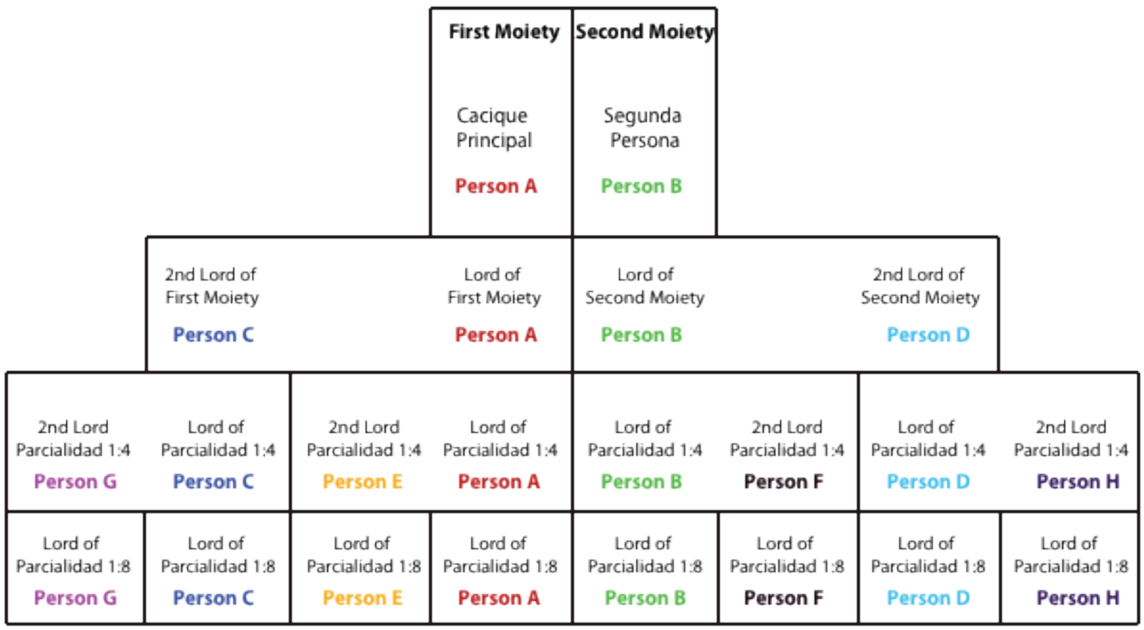


**Figure 1.7: Moiety division and hierarchy of the Chicama Valley in 1565 (After Russell and Jackson 2001:162; based on Netherly 1984 Table 1).**

According to Netherly (1984) the river and the irrigation network dictated the division of the land in the Chicama Valley into parts that corresponded to the lands of the *cacique principal, segunda persona,* and the lower level *principales*. Unfortunately, we do not know if there were material differences between these *parcialidad* divisions during the colonial era. With such data, we could draw possible analogies between contact period and Moche material remains to better understand the Moche system of organization. Nonetheless, in contrast to what Ramírez claims (2005), I suggest that there was some meaningful partitioning of the landscape during Moche times that is visible in the spatial patterning of different Moche styles in the archaeological record. The research I present in this dissertation shows that the Moche V ceramic style originated in the northern Chicama Valley and likely corresponded to the branch of the canal system that ran through Licapa II. This will be further explored in Chapter 9. This observation, in conjunction with Netherly's work (1984), suggests that the division of the landscape was a reality on the North Coast where the people were dependent on the canal system for irrigation agriculture.

However, since we do not know the precise function of Moche huaca centers, and 800 years separate Moche from historical accounts of modern chroniclers, specific parallels cannot easily be drawn. Archaeology, though, can allow us to clarify relationships between huaca centers, including the kinds of practices that might have occurred, the kinds of materials produced, consumed, and exchanged, and the differences and similarities in symbolic and iconographic repertoires. My work evaluates architecture and ceramics from Licapa II to explore how this settlement was connected to the rest of the Moche world.

The Production, Consumption, and Distribution of Fine Moche Ceramics

One way to evaluate the interconnectedness of sites is through the evaluation of the systems of ceramic production and distribution. Cream and red fine ware ceramics are a hallmark of Moche culture and are found at huaca centers of all sizes. Until recently, most variations in Moche fine ware styles were associated with temporal differences. With increasing excavation of provenienced ceramics, many of these variations are now recognized as regional or local styles possibly distinct to one or more huaca center (Bourget 2010; Castillo 2001; Chapdelaine 2010; Donnan 2007). Understanding where ceramics were manufactured and how they were distributed can contribute to understanding relations between people within and between sites and regions (Hill 1977; Plog 1976).

Tackling all aspects of the nature of ceramic production is beyond the scope of this project (Clark and Parry 1990; Costin 1991; Costin and Earle 1989; Costin and Hagstrum 1995; Hruby et al. 2007; Roux 2003). I do, however, perform a comparative analysis of Moche fine ware ceramics to see if similarities in the style of the surface decoration (Hegmon 1992; Sackett 1977; Wiessner 1985; Wobst 1977), technological style (Lechtman 1999; Lechtman and Merrill 1977; Sillar and Tite 2000; Stark et al. 1998; Tite 1999), and chemical composition (Bishop et al. 1982; Neff 1993) can be associated with a particular suite(s) of ceramics found at the sites of Huacas de Moche, El Brujo, San José de Moro, Cerro Mayal and Licapa II.

Hegmon (1992) defines style as a way of doing something that involves a choice. The external surface decorations on a vessel (paint, incisions, the use of figurative molds, ect.) are thus expressions of style. The technological choices made in the manufacturing of a vessel, such as the type and amount of temper, clay composition, and the forming techniques (coiling, paddle and anvil, molds, act.) also constitute forms of style (Lechtman 1977). In my analysis I evaluate both the **external** (surface decorations, designs, and drawings) and **internal**, or technological (clay and temper minerals, void spaces/shapes, etc.), styles of ceramic vessels. While two vessels may have the same external style, they may differ in internal styles, indicating complexities in the organization of production and/or the nature of the distribution of power.

It is important to distinguish between the movement of ceramic objects and that of ceramic technology. Ceramic technology can be replicated and transported from site to site or region to region, but the clay's mineralogy may differ depending on where the materials were procured. Using the assumption that ceramic similarities indicate or suggest political affiliations, I use standard ceramic analysis and petrographic data to evaluate the Dependence, Independence and Dynamic hypotheses presented in the introduction to this chapter. Figure 1.8 shows possible combinations of internal and external styles as they relate to these hypotheses; note that this framework could be applied to material culture in general, and is not limited to ceramics. Similar internal and external styles would signify a shared ideological, political or economic system, and suggest that the sites where these ceramics are found were affiliated. In contrast, sharp differences in both internal and external styles between sites would suggest limited affiliation. Similar surface designs but different internal composition would suggest shared ideology and even politics, but local manufacture, suggesting putative political alliances but local control (at least over ceramic production) (Clark and Parry 1990; Costin 1991). On the other hand, similar technology/materials but different surface styles would imply common economic enterprise but different ideology. Moreover, if the objects themselves were moved, this could signify a broad exchange network and a different type of sociopolitical interaction (Arnold 1985; Hill 1977; Plog 1976; Rice 1987).

An analysis of ceramic heterogeneity at a site may help determine the role that site played in the regional distribution system (West 2002). Therefore, I propose that determining the degree of heterogeneity of fine wares at Licapa II should shed light on the degree of population movement, the movement of goods, and/or the adaptation of technological styles by the people residing at the site.

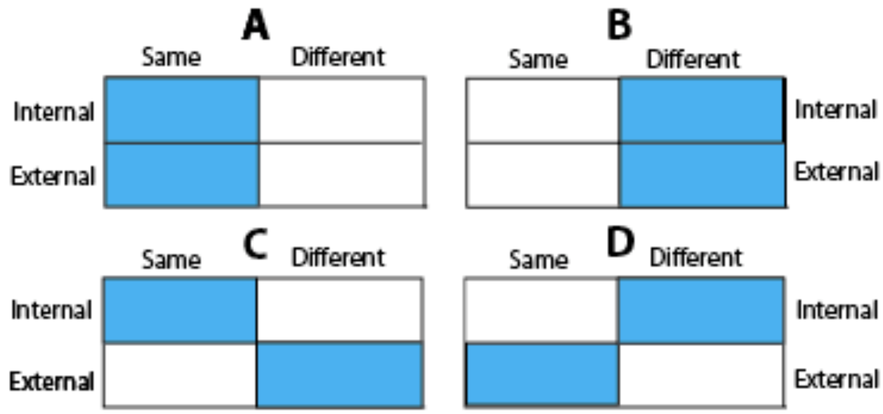


**Figure 1.8: Potential combinations of internal (clay structure) and external (surface decoration) ceramic styles and how these characteristics may indicate affiliations between sites. (A) Similar internal and external styles would indicate close affiliations between sites, suggest that the large sites were in control over the production of Licapa II and possible political/ideological or economic dominance. (B) Differences in both internal and external styles would indicate that Licapa II was not affiliated with the other centers and was likely politically, ideologically and/or economically independent. (C) Similar technology/materials but different surface styles would suggest putative common economic enterprise but different ideology. (D) Similar surface designs but different internal composition would suggest shared ideology and even politics but local manufacture, implying possible political alliances but local control (at least over ceramic**

<u>Architecture and Power</u>

Definitions of authority and power have traditionally been starting points for discussions of Moche sociopolitical organization (Bawden 1996; 2001; Billman 1996; 1999; 2002; DeMarrais et al. 1996; Lockard 2005; Quilter 2002; Quilter and Castillo 2010; Uceda 2001, 2010). According to Michael Mann (1986), there are four sources of power: ideological, economic, military, and political (IEMP). But for ancient societies like the Moche, it can be difficult to distinguish between these sources, as past behaviors or intentions are not easily seen in the archaeological record. For example, control over economic resources (including labor, land, irrigation networks, technology, and the means of production) is critical for obtaining and maintaining political power (Brumfiel and Earle 1987; Earle 1997; Service 1975). Likewise, religious practices and beliefs tend to reinforce political relationships because they both "empower" the participants and legitimize the overarching authority (Marx 1867). It is thus difficult to clearly partition economic, ideological, and political power because they likely are inextricably linked. More difficult yet are the interplays between power structures, their organization, and their integration across geopolitical landscapes. However, in addressing power relationships and site affiliations we can look at the distribution of settlements that share similarities in their monumental architecture.

Monumental architecture can be defined as any building, plaza, or constructed space whose size and elaboration exceed its practical function (Trigger 1990). It can be used as a way to justify and legitimize the power of elites (Moore 1996) and can also reflect sociopolitical, economic, and ideological affiliations within a society as a whole. Moche huacas are a perfect example of monumental architecture and are the product of the elite's ability to manage resources, recruit surplus labor, and employ specialized craftsmen. Current approaches to understanding site affiliations include comparative studies of similarities in architectural canons between sites. These include huaca form (number and size of tiers, placement of ramps, ect.), placement on the landscape (orientation, location in valley, proximity to irrigation canals and prominent geological features, ect.), materials used (brick size, shape, form, markings, ect.), artistic programs (murals, friezes, and ornate construction features), plaza shape, size and placement relative to the huacas, and the relation of the huacas to other site features such as residential areas, cemeteries, canals, and other buildings. Although huacas are not portable, the technology of brick manufacturing and concepts of architectural planning can be transported throughout a region. Standardization in these features between sites might suggest shared ideologies and possibly denote sites under the same sociopolitical and/or religious authority.

However, the archaeological record is a palimpsest of occupations and the relationships between settlements were likely in constant flux. Excluding this dynamic from consideration may lead us to manufacture relationships and alliances between settlements that did not exist. In fact, many of the huacas seen today are products of multiple construction phases. The final size of a huaca may not be proportional to its power, or the power of the ruler, at any point in time. Huacas could have been erected quickly or built over several generations. Huaca Cao Viejo at El Brujo is a case in point. This is one of the largest Moche huacas that was thought to be the counterpart to the Huaca de la Luna. Together, the two huacas were seen as a symbol of the power of the Moche state. However, it now appears that the Huaca Cao Viejo came under the influence of Huacas de Moche only late in its use-life (Quilter et al. 2012). We might expect similar processes to have occurred between larger centers and smaller ones, such as Licapa II. If there were strong influence from the large centers during a limited period of use-life of Licapa II, it should be evidenced by short-term conformity to the architectural program and ceramic styles from the larger sites. Due to these multiple complexities, while monumentality can be a gauge for understanding relationships between centers of different sizes, it is not necessarily a proxy for power.

Assuming that similar architectural features relate to similar sociopolitical/religious affiliations, the documentation of monumental architecture at

Licapa II and the comparison of these features to other Moche centers will allow us to evaluate the degree to which these features were shared between centers. By combining my monumental work with a study of ceramics, I aim to improve our understanding of the role of Licapa II in the Moche system.

Radiocarbon Dating

A crucial element of geopolitics is the importance of contemporaneity (A. Smith 2003). This is a particularly important point when examining societies such as the Moche, which persisted for over 600 years. Unfortunately, there has been a great tendency to conflate Moche as a static and singular phenomenon. The very language we use, "The Moche," implies a timeless phenomenon despite our lack of precision as to when Moche began and ended. In this dissertation I will interrogate what we know about Moche chronology based on the evaluation of radiocarbon dates and their material correlates from Licapa II and seventeen other Moche sites. By improving our chronological understanding of Moche, my work will delineate links between sites based on the temporal relations among sites and features of sites.

## Implications of the Study

Interpreting political affiliations between centers based on material remains is fraught with difficulties. Similarities in style can be attributed to a number of factors including trade, emulation, the movement of people, the movement of technology, or direct control by an authority. Differences in style can be related to the political, economic, or religious independence of a ceremonial center, or it may be due to other factors including markers of group identity, ethnicity, or kinship ties.

People identify themselves and act in relationships with one another in a number of ways and in terms that are commonly defined by scholars as ethnicity, kinship, politics, identity, religion, economics, social ties, and others. Separating these is difficult for Moche, as for any prehistoric culture, even though I define it as primarily as a religion. One of the problems faced in Moche studies is understanding how identity and agency were constituted. We are in the initial stages of addressing these issues, so for the purpose of this dissertation I am viewing identity and agency in terms of politics and religion. I recognize that this is a rather simple and unrefined way to deal with such complex topics, but it is necessary to start somewhere in order to take the first step towards more sophisticated analyses in the future. Nevertheless, comparing different sized huaca centers will undeniably provide data to move us closer to the goal of understanding how the archaeological data relates to the ideas and behaviors of the people who made and used the material culture that comprises it.

This work is a significant contribution to the field in three important respects. First, Moche's distinct archaeological signatures (ceramics, architecture, etc.) have long been seen as emblematic of an ethnic and political reality and defined as the first evidence for a South American state (Moseley 1992; Stanish 2001). However, current scholars have begun to disentangle these assumptions and view Moche as a more complex mosaic of interacting settlements across a landscape. My research at Licapa II is the first study of a site of its size and kind, thus constituting a novel contribution to the paradigm shift in Moche studies. Second, my work addresses whether or not size is an indicator of a settlement hierarchy and political control, and examines the relationship between Licapa II and other Moche sites throughout the region. Finally, the results of my ceramic petrographic analysis and radiocarbon dating will help refine Moche fine ware ceramic and architectural chronology. These data will allow us to ask more complex questions about the "glue" or the mechanisms that held Moche together. For example, was this "glue" social in nature (relating to kin ties or ideological factors) or more economic and landscape driven in nature, in that all settlements on one branch of the irrigation system, no matter their size, share certain material expressions? Alternatively, were combinations of these or other factors at play? In summary, my work contributes to the literature on the comparative studies of complex societies and adds to our understanding of how such societies function.

## Structure of the Thesis

In this chapter I have created a general framework for my approach to Moche political organization from the perspective of Licapa II. In Chapter 2, I review the natural and cultural environment of the Chicama Valley. My review of the natural setting focuses on the geology of the region, which is related to the petrographic study I performed and present in Chapter 6. I also discuss the climate, including the effects of ESNO (El Niño Southern Oscillation) cycle, and the need for irrigation agriculture. The second part of this chapter discusses the past cultural developments in the Chicama Valley from pre-Moche to post-Moche times.

In Chapter 3 I discuss previous research on the Moche. I examine early projects that have contributed to our current understanding of the political landscape of Moche and review the ceramic sequence developed by Rafael Larco Hoyle (1948) that is still used as the starting point in understanding Moche chronology. In this chapter I also layout the difference in the northern and southern Moche regions, paying particular attention to research at Huacas de Moche, El Brujo and San José de Moro. I also review ceramic data from various sites that are crucial for developing my argument on political dynamics at Licapa II. I conclude the chapter with a discussion of the current state of Moche studies.

Chapter 4 will introduce the site of Licapa II in detail and discuss the previous research performed there. I then describe the fieldwork I undertook in 2010, which included a surface collection of diagnostic ceramics (rims, bases, and painted sherds), excavations in three sectors of the site (Huaca A, Huaca B and between the huacas) and geophysical surveys (ground-penetrating radar and magnetometry). My data collection focused on three main bodies of evidence to understand the role of Licapa II in the overall Moche world. These include ceramics, architecture, and radiocarbon dates. Each of these will be discussed in greater detail in subsequent chapters, but are covered briefly in Chapter 4. In this chapter I show that the two huacas on the site, Huaca A and Huaca B, were drastically different in form and were constructed at different times. The huacas were also characterized by different ceramic styles. This information helps clarify the relationship between time and style in the Moche world.

In Chapter 5 I review artifacts, botanical and faunal remains independently of the ceramics found on the site. This evaluation aims to contextualize everyday life at Licapa II, and shows that Licapa II has many characteristics found at other Moche sites.

Chapter 6 is a detailed examination of the ceramics from Licapa II. I first review Moche ceramic technology, including mold production, firing, and slips. I subsequently discuss how recent research has demonstrated that the Larco sequence is no longer applicable, and how my research contributes to this view (Benson 2003; Castillo and

Donnan 1994a; Donnan 2011). I present the analysis of ceramics found in excavations and surface collection at Licapa II to show how the different sectors of the site changed in function and use over time. In addition to having tight chronological control, to be able to understand site interactions it is imperative to examine trade networks and other indicators of interaction, including similarities in employed technologies and artistic representations or symbols. To address these issues I performed a petrographic study of fine ceramics from three sites in the Chicama Valley: Licapa II, El Brujo, and the known ceramic production site of Cerro Mayal. I also examined Late Moche fine sherds from the cemetery site of San José de Moro in the Jequetepeque Valley to the north and from the largest Moche center, Huacas de Moche. This study addresses whether similarities in surface decoration, or external style, can be related to the internal, or technological style, and mineralogy of the ceramics. From this study I conclude that there was no strict standardization of ceramic manufacturing and that trade, emulation, and invention were practiced. Overall, this study has allowed me to discuss new aspects of ceramic production, consumption and exchange at Licapa II and beyond.

Chapter 7 is an evaluation of the architecture, mainly the huacas, at Licapa II. In this chapter I compare features of the huacas to features seen at other Moche huaca centers, which include the site layout, form of the huacas, orientation, bricks, construction techniques, and function of the huacas. I show that although many huacas remain unstudied, there are more differences than similarities between centers. These variations in techniques suggest a dynamic environment of interaction between the people residing at the various Moche centers and do not point to a pattern of standardization or a single site dominating or controlling other sites. In this chapter I also discuss the issue of scale and show that the distribution of different sized settlements across the landscape may relate to the nested nature of authority in Moche times derived from a colonial model.

In Chapter 8 I present radiocarbon dates from Licapa II and seventeen other Moche sites. Radiocarbon samples were collected from multiple intact contexts throughout the site, to place Licapa II in chronological context. This contextual information enabled me to review radiocarbon data coupled with ceramic data from the same contexts from other Moche sites. Using these combined data from Licapa II and other sites, I present a revised general view of Moche chronology. First, I show that the dates for Moche need to be revised from the previously accepted 100 - 800 AD to 300 - 900 AD. Second, I demonstrate that there was a major change that took place in the Moche world around 600 AD. Third, I demonstrate that the earliest dates for the Moche V ceramic style are found at Licapa II. This leads me to conclude that this style originated in the northern Chicama Valley sometime around 650 AD.

Chapter 9 reviews all the datasets discussed above to contextualize Licapa II in the Chicama Valley and the Moche world. Using ceramic, architectural, and radiocarbon data I return to the hypotheses presented in this chapter to present my understanding of the role of this mid-sized center. I show that Licapa II was likely an independent center intimately connected to a dynamic landscape of interconnected nodes in an ever-changing and complex network of sites. In this network, alliances and relationships crosscut the northern and southern Moche boundary and may have been based on nested authorities that were quite fluid and changing through time. This research shows that we need to reevaluate the nature of this recently established boundary, and our understanding of

Moche politics in general by performing more research on smaller huaca centers and obtaining better contextualized radiocarbon dates. I conclude this chapter with my future directions for research at the site and in the general region.

# CHAPTER 2

## THE NATURAL AND CULTURAL SETTING OF THE CHICAMA VALLEY

In this chapter I review the physical environment of Andean regions, as well as the cultural developments that occurred within those landscapes. I pay particular attention to the Chicama Valley because this data will serve as background information to contextualize my research at Licapa II. As such, this chapter will describe the natural processes that contributed to cultural development in the Chicama Valley during Moche times.

### The Natural Settings in and Around the Chicama Valley, Peru

#### Andean Geology and Petrology

Today, the central Andes encompass parts of Peru, Ecuador, northern Chile and Bolivia. The mountains remain in a constant state of geologic orogenesis, rising at a rate of 15 cm per year (Moseley 2001). The subduction of the Nasca tectonic plate under the South American plate causes this uplift and has contributed to the creation of two parallel, north-south oriented mountain ranges. The western-most range is called the Cordillera Negra, and its peaks are relatively dry and free of snow. By contrast, many peaks along the eastern range, which often reach heights in excess of 6,700 meters above sea level (masl), are capped by snow. The distinction between the two ranges—relatively dry as opposed to intermittent snow cover—is caused by humid air from the eastern tropics colliding with arid winds from the west. This eastern range, then, is referred to aptly as the Cordillera Blanca (Sandweiss and Richardson 2008).

The Andes are composed of various plutons; defined as bodies of intrusive igneous rock that result from the crystallization of magma that slowly cools below the surface (Young 2003). Agglomerations of plutons are called batholiths. Geologically recent batholiths are almost always made of felsic or intermediate rock-types, such as granite, quartz monzonite, or diorite. Geologically earlier batholiths can be more mafic in nature and contain gabbros and basalts (Cobbing 1981; Cobbing and Pitcher 1972). The Andes consist of several linear chains of these batholiths. For instance, the Peruvian Coastal Batholith (PBC) is over 1,600 km long and contains over 1,000 plutons composed of several rock varieties (Haederle and Atherton 2002). These plutons formed roughly between 102 to 34 million years ago (mya) and include earlier mafic gabbros, and later, more felsic rocks that include granodiorites, granites, and tonalites (Cobbing and Pitcher 1972). The PBC is located in the Cordillera Negra, the range immediately east of the Chicama Valley. The distribution of mafic vs. felsic rock within these coastal valleys is not homogenous because of variations in the PBC. Therefore, I hypothesized that if these differences are identifiable through petrographic analysis, then we can begin to understand where ceramics were produced and to where they were distributed. Figure 2.2 presents variations in the geological formations between the Jequetepeque, Chicama, and Moche valleys. Although the scale is quite large, some of these differences are potentially identifiable by the mineral and rock inclusions noted during detailed ceramic petrographic studies. This study will be discussed in Chapter 6.

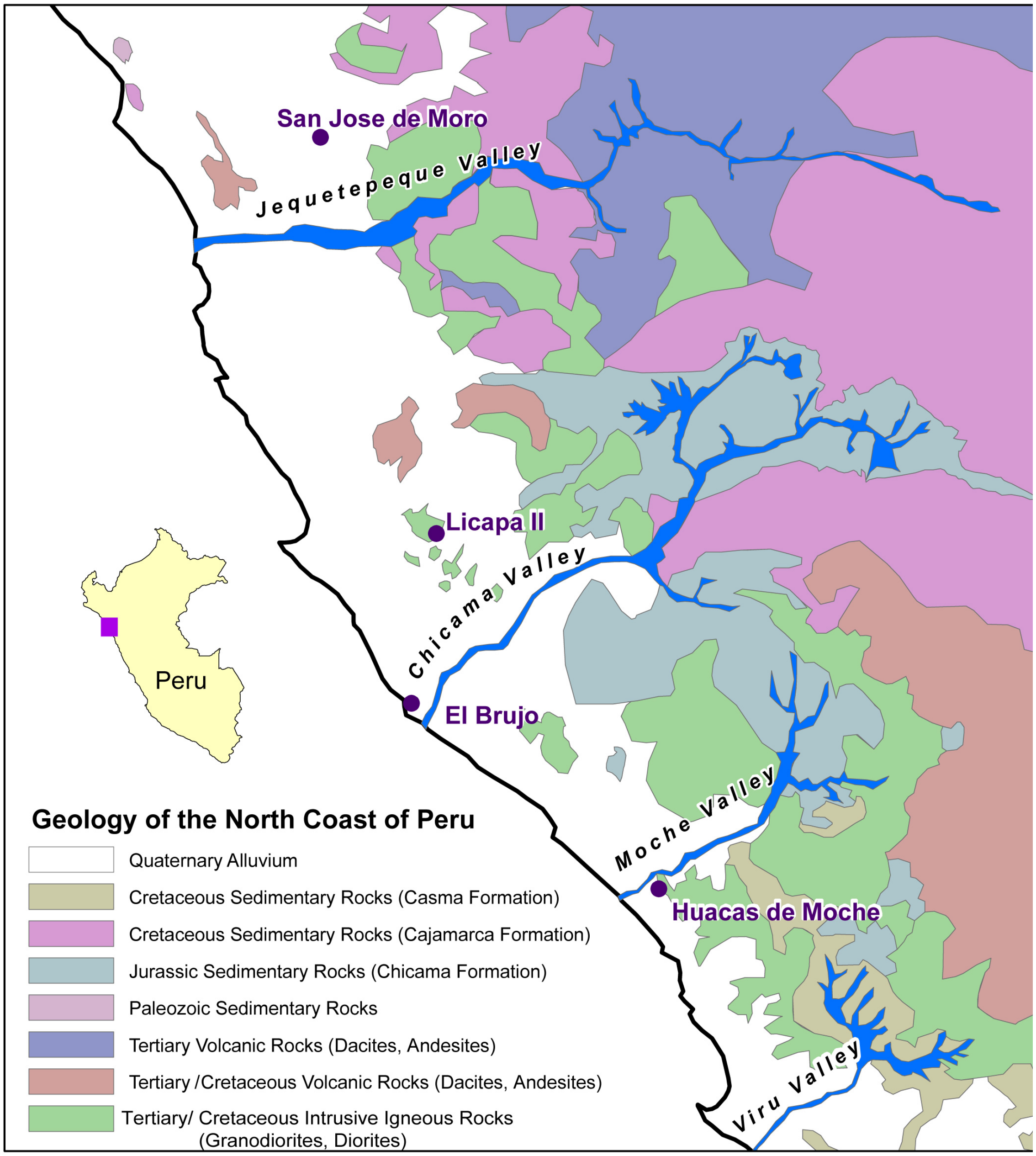


**Figure 2.1: Geology of the North Coast of Peru showing major geological formations.**

The PBC is cross cut by erosional river valleys that have their headwaters high in the Andes. The rivers within these valleys, including the Chicama Valley, descend through the various attitudinally delineated environmental zones to eventually open onto the coastal plain and drain into the Pacific Ocean.

West of the Andes, Quaternary and Holocene alluvial and aeolian deposits have contributed substantially to the geology of coastal and lower valley regions (of which the lower Chicama Valley is a part). Aeolian sediments are found mainly on the northern and southern margins of the valley and along the coast and alluvial sediments dominate the valley plains (ONERN 1973). *Cerros,* large hills found in and around alluvial plains, are another important geological feature of the lower coastal valleys. As remnants of Cretaceous and Tertiary igneous rocks, these *cerros* underlie the sedimentary deposits and form the PCB. Licapa II is situated on the skirt of one these formations, known as Cerro Azul. Cerro Azul contains large sand dunes consisting of aeolian sediments that may have contributed materials to ceramics produced at or near Licapa II. This sand was also incorporated into the architectural constructions at Licapa II. Chapters 4 and 7 describe this link of sand and architecture in greater detail.

<u>Environmental and Ecological Setting of the Chicama Valley</u>

The Chicama is one of 57 valleys that empty into the Pacific Ocean along Peru's 2,414 km coast (Moseley 2001). The valley is situated along the northern expanse of the vast coastline, between the Moche and Jequetepeque Valleys and just to the south of the Pampa de Paiján. The Pampa de Paiján is the largest stretch of desert south of the Sechura and north of the Atacama in Chile and serves as a natural barrier between the northern and southern Moche regions (Castillo and Uceda 2008). Like all Peruvian coastal valleys, the Chicama Valley extends through various attitudinally defined environmental and ecological zones.

The National Office for the Evaluation of Natural Resources (ONERN) divides the Chicama River basin into five zones based on altitude differences, climate, and natural vegetation. These zones correspond roughly to Javier Pulgar Vidal's (1987) assessment of Peru's environment, which he identifies using *Quechua* terms (Table 2.1). The majority of Moche settlements, including Licapa II, fall within the lower and middle portions of their perspective valleys. The lower valleys fall within the Premontane Desert Zone (also known as *chala*) and lie between 0-500 masl. The zone directly to the east of the Premontane Desert Zone is known as the Scrub Desert Zone, or *yunga.* No major Moche centers are located in this zone, but it was vitally important during Moche times, as will be described below.

**Table 2.1: Peru's environmental zones delineated by ONERN (1973) and Vidal (1987).**

| ONERN (1973) | | Pulgar Vidal (1987) | |
|---|---|---|---|
| 0-500 masl | Premontane Desert Zone | 0-500 masl | *Chala* |
| 500-1,800 masl | Premontane Scrub Desert Zone | 500-2,300 masl | *Yungas* |
| 1,600-2,800 masl | Low Montane Steppe | | |
| 2,600-3,700 masl | Humid Montane Grassland | 2,300-3,500 masl | *Quechua* |
| 3,700-4,200 masl | Very Humid Montane Grassland | 3,500-4,000 masl | *Jalca/Sami* |
| 4,200-4,700 masl | High Altitude Grassland | 4,000-4,800 masl | *Puna* |

<u>Pacific Coast</u>

The Pacific Ocean is located at the mouth of the Chicama River, and the vast coastline to the north and south is one of the most productive fisheries in the world. The waters off this coast are unusually productive because of a combination of factors. Tropical waters off the coast of Peru sit on top of a deep ocean trench. The south to north running Pacific Humboldt Current runs along this trench and upwells deep-sea nutrients into the tropical waters off the coast of Peru. These nutrient-filled waters, rich in phytoplankton, form the basis of a productive food chain that attracts a wide variety of fish, bird, and mammal species (Moseley 1975; Sandweiss and Richardson 2008). These maritime resources provided past coastal peoples with a significant portion of their diets.

Periodically, this bountiful upwelling is disrupted by El Niño events, which cause water temperatures to rise and disrupt the ecological balance. This factor has contributed greatly to the normal functioning of coastal societies, past and present. El Niño events are described below in greater detail.

Lower Chicama Valley

The site of Licapa II, in the lower Chicama Valley, is situated within the Premontane Desert Zone. The zone begins at the measurable shoreline and continues up the neck of the valley to a point approximately 360 masl, near present-day Sausal, (ONERN 1973). Given geographical constraints, this area encompasses only a portion of the total Premontane Desert Zone, which by definition extends from sea level to 500 masl (ONERN 1973). The average zonal temperature in the Chicama Valley is 20.8° C, and—except for El Niño events that cause torrential rains and bring massive floods—the average annual precipitation ranges from 5-100 mm.

Apart from the upwelling of nutrients along the coast, the Humboldt Current also accounts for the extreme aridity of coastal valleys. The Humboldt Current cools marine air. As the air moves east, it is warmed by the landmass, which creates a temperature inversion that impedes precipitation (Howell 1953; Johnson 1976; Moseley 1975). As the air continues to climb up the western slope of the Andes, it cools and forms mist in the upper-lower and middle valleys. This mist forms a fog that sustains some vegetation in areas called *lomas*. In the past, prehistoric populations, including the Moche, collected wild plants in the *lomas* and hunted coastal deer populations that fed on *lomas* vegetation.

Rain begins to fall as moisture-laden clouds climb the western slope of the Cordillera Negra and reach altitudes of 2,500+ masl. These rains supply the upper valleys with irrigation water that eventually flow toward the dry coast to sustain agricultural practices. Seasonal discharge from the Chicama River is not uniform; 86% of the total annual discharge occurs during a 5-month period between the months of January and May. During winter months, the discharge is significantly lower. The minimum annual discharge averages 4.10 $m^3$ per second, and the maximum average is 78.74 $m^3$ per second (ONERN 1973:199; Watson 1979:59). Because lower valleys are situated to catch runoff from the upper zones, the wide sprawling alluvial plains located in these valleys hold the greatest potential for irrigation agriculture. Licapa II sits on the margin of such a plain.

The Chicama Valley also contains sources of subterranean water – the result of a relatively high water table – that likely were known and exploited during Moche times. To capitalize on these water sources, past cultures in the Chicama Valley constructed *mahames* (excavated fields) in places where subsurface water was relatively shallow (West 1979). *Mahames* were constructed by excavating the ground surface to just above the water table to supply a continuous source of water to crop root zones. Chicama Valley *mahames* were located in inland coastal areas in portions of the northern lower valley, and although they are believed to be prehistoric, their period of use is unknown since they have not been archaeologically investigated (Watson 1979) (Figure 2.2).

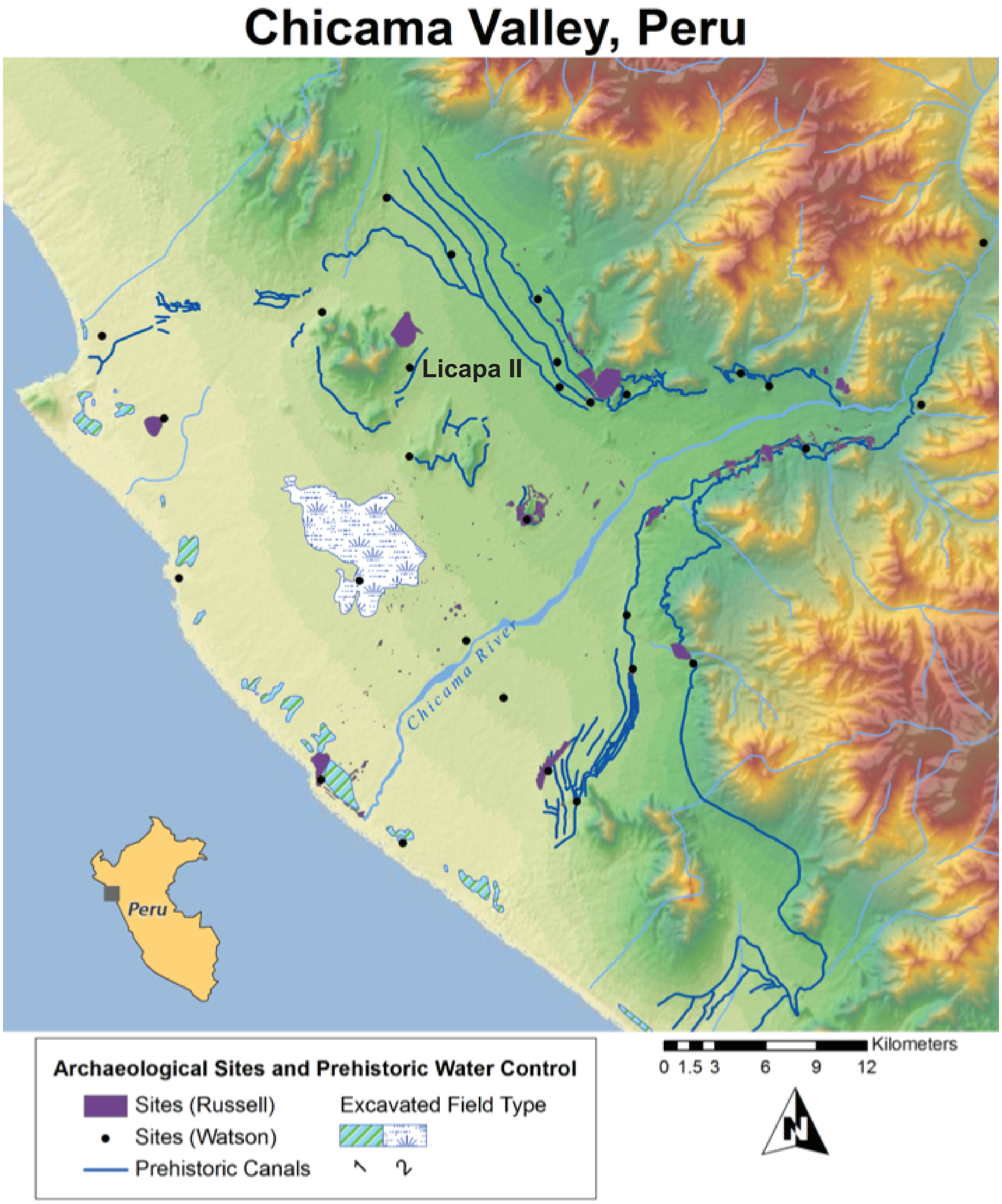


**Figure 2.2: Detail of ancient canal system and excavated fields in the Chicama Valley, Peru. Also included are archaeological sites identified by Leonard and Russell (1992) and Watson (1979).**

During Moche times, irrigation and potentially *mahames* supported a variety of cultigens that included grains, legumes, fruits, roots and tubers, condiments, containers and fiber plants (Table 2.2) (Watson 1979:81-83). Excavations at Licapa II found evidence for many of these cultigens (Vásquez and Rosales 2010).

**Table 2.2: List of crops grown in pre-Hispanic Peru (Watson 1979:81-83).**

| **Grains** | **Scientific Name** | **Fruits** | **Scientific Name** |
|---|---|---|---|
| Maize – Corn | *Zea Mays* | Chirimoya | *Annona cherimolia* |
| **Legumes** | **Scientific Name** | Guanábana – Soupsop | *Annona muricata* |
| Mani – Peanut | *Archis hypogaea* | Cansaboca | *Bunchosia armeniaca* |
| Pacae | *Inga feuillei* | Zapallo – Squash | *Cucurbita maxima* |
| Pallar – Lima Bean | *Phaseolus lunatus* | Calabaza – Squash | *Cucurbita moschata* |
| Frijol – Common Bean | *Phaseolus vulgaris* | Caigua | *Cyclanthera pedata* |
| Algarrobo | *Prosopis chilensis* | Pepino – Tree Tomato | *Cyphomandra sp.* |
| **Roots and Tubers** | **Scientific Name** | Lucuma | *Lucuma bifera* |
| Achira | *Canna edulis* | Palta – Avacado | *Persea Americana* |
| Camote – Sweet Potato | *Ipomoea batatas* | **Condiments** | **Scientific Name** |
| Yuca – Manioc | *Manihot esculenta* | Ají – Chili Pepper | *Capsicum sp.* |
| Papa – Potato | *Solanum tuberosum* | **Nuts** | **Scientific Name** |
| **Fiber Plants** | **Scientific Name** | Nogal – Peruvian Walnut | *Juglans neotropica* |
| Algodón – Cotton | *Glossypium barbadense* | **Containers** | **Scientific Name** |
| Totora | *Scirpus totora* | Calabazo – Gourd | *Lagenaria siceris* |

Farrington (1974) and Netherly (1984) classified agricultural land in the lower valley according to its access to water resources, and therefore, its agricultural productivity and desirability. The land can be divided into four categories presented in Table 2.2 in descending order of use potential. In regards to agricultural endeavors, the location of Licapa II falls into the fourth category. It occupies an undesirable location, on an irrigation canal branch located far from the river. Therefore, past water management practices would have been vital for this area to receive sufficient water for year-round or even partial-year irrigation. I return to this topic in Chapter 9.

**Table 2.3: Agricultural land types in the Chicama Valley in descending order of productivity and desirability (Netherly 1984:235-236).**

| Agricultural Land Type | Defining Variables and Conditions (Non-exclusive) |
|---|---|
| Permanently Cultivated | • Irrigation unnecessary (permanent water-table access)<br>• Permanent canal irrigation from groundwater upwelling<br>• Use of sunken field<br>• Ready access to river<br>• Ready access to underground aquifer<br>• Behind beach<br>• Regular maintenance to control salinity<br>• Labor intensive to create |
| Irrigated | • Minimum yield of 2 yearly crops<br>• Close to canal uptake<br>• Usually located in upper-lower valleys where soils better drained and productive |
| Floodwater | • Along regularly flooded river banks<br>• Single crop planted and harvested during dry times<br>• River-born silt increased productivity<br>• Increased potential of crop washout or burial due to location |
| Irrigation Canal Ends | • One crop per year with sufficient water availability<br>• Unreliable productivity<br>• Irrigation canals/agriculture systems could be easily expanded |

Middle Chicama Valley

The Middle Chicama Valley is located in the Scrub Desert Zone, along the upper portion of the Premontane Desert Zone (ONERN 1973). This zone also is known as the *yungas* (Pulgar Vidal 1987), and is located at an altitude roughly between 500-1,800 masl (ONERN 1973). This portion of the Chicama Valley is narrow, a topographic feature that contrasts sharply to the lower valley's wide alluvial plain. Zonal climate is warmer, sunnier, and marginally wetter, with an average annual rainfall of 50-200 mm. The *yungas* were important to the Moche because many of the highest elevation irrigation canals began there. Management of these was needed for irrigation control and to ensure access to water farther down the valley (Moseley and Deeds 1982; Shimada 1994).

Additionally, the numerous *yungas quebradas* (dry canyons) would have provided trails to facilitate passage of inter- and intra-valley communication and trade, as well as access into the Andean highlands. *Yungas* also support a range of cultigens that do not grow well on the coast. These include coca and the hallucinogenic San Pedro cactus, both of which the Moche used in ceremonies and art, as evidenced on Moche stirrup-spout vessels (Benson 1972; Donnan 1978; Uceda 2008). Finally, *yungas* are mineral-rich; copper, gold, and silver were mined and smelted to produce metal objects and for use as pigments on murals, textiles, and ceramics (Lechtman 1976; Shimada 1994).

Both prehistorically and in more recent times, the *yungas* was a region of contention (Rostworowski 1988). Lau (2004) has argued that Moche and highland Recuay populations waged war in the *yungas*. In the coastal valleys, including the Chicama, settlement surveys (Leonard and Russell 1992) have uncovered evidence of an increase in pre-Moche, middle valley fortifications. These seem to have been constructed to provide lower valley populations some protection against highland incursions (Billman 1996; Wilson 1988). Sutter and Verano (2007) recently have shown that sacrificed prisoners found at the Huaca de la Luna were of foreign, possibly highland, descent. However, the implications for this are just beginning to be explored.

Polish crews conducted two pedestrian surveys in the *yungas* of the upper Chicama Valley that focused primarily on the identification of settlements from all time periods (Krzanowski 2006; Zaki 1973). Currently, more projects are beginning to research the Moche highland-coastal relationships (Luis Jaime Castillo, personal communication; Ringberg 2012). However, generally, very little archaeological research has been performed that addresses Moche connections between the Chicama's lower valley and the *yungas* region.

<u>El Niño/ Southern Oscillation (ENSO) Cycle</u>

The north coast of Peru is affected by the El Niño/Southern Oscillation (ENSO) cycle, which includes El Niño and La Niña events. The El Niño derives its name from the Christ Child because the event occurs generally around Christmas. El Niño events cause temperature increases (1-5º C) in ocean surface water and La Niña events decrease the temperature of those same waters (Maasch 2008). Air moisture increases during El Niño events, leading to coastal rains that in turn cause floods with high debris flow. Conversely, La Niña events lead to desertification and droughts. Together, these ENSO events disrupt climatic patterns, cause changes in the marine ecosystem, and alter maritime food supplies.

El Niño events occurred in the past, the evidence of which can be reconstructed through proxy records. These include the distribution of fish and mollusk remains from archaeological sites that are identified as related to disruptions in the normal food chain. This reconstruction method confirms that El Niños were rare if not altogether absent during the early Holocene Epoch. By 5,800-3,000 cal BP, archaeological evidence suggests El Niños began and were intense, but they remained rare and sporadic in occurrence. The modern ENSO cycle began around 3,000 cal BP and continue to this day (Sandweiss et al. 1996; Sandweiss et al. 2001). Modern cycle El Niño events typically occur every three to seven years, and last from several months to over a year (Maasch 2008). Additionally, every 50-100 years particularly strong events occur.

As today, past peoples of coastal Peru would presumably have been very familiar with these events. Heavy rains would have been destructive, wreaking havoc on canal systems, agricultural fields, and settlements, which were built primarily of mud brick materials. However, different El Niño events do not affect valleys in the same way; certain regions have experienced severe devastation in one cycle and then little rain in others. El Niño events likely occurred frequently enough that ancient coastal peoples developed strategies to cope with the adverse effects (Dillehay and Kolata 2004; Quilter and Stocker 1983; Swenson 2007). These strategies may have included (1) communication and trade between highland, coastal, and adjacent valleys that reinforced stability, (2) settlements in areas of opportunity that were only irrigable during such events, and (3) complex canal system management strategies that efficiently mitigated damage and planned for repairs.

Many Moche scholars, beginning with Moseley and Deeds (1982), have noted that the Moche collapse was due in part from the repercussions of a series of El Niños sometime between 500 and 600 AD. Evidence of flooding from one such event was found between the Huaca de la Luna and the Huaca del Sol, at the Huacas de Moche (Moseley and Deeds 1982). However, these sediments have not yet been dated. Instead, the dates that were given were dictated by the common conception that the Moche collapsed around 500 AD. Scholars now accept a timeline that has Moche civilization continuing for centuries after this date. Given this, the flood deposits at the Huacas de Moche should be reexamined to determine their age and the relationship between the events and the occupation of the site. Nonetheless, recent research has shown that El Niños were in part responsible for the temporary abandonment or complete abandonment of some Moche settlements, and reorganization at others, and therefore, were and are a significant climatic factor to contend with on the north coast of Peru (Moseley et al. 2008).

Other Natural Factors on the North Coast

Other factors affecting life on the north coast of Peru include droughts, dunes, earthquakes and tsunamis, all of which have the potential to cause major disruptions to everyday life and are discussed below. The north coast of Peru is one of the driest regions on earth, so droughts simply exacerbate an already difficult environment for the inhabitants. Droughts can be caused by La Niña events, but also because of lack of precipitation in the highlands leading to low river discharge. Based on samples collected from the Quelccaya ice core in southern Peru, Dillehay et al. (Dillehay et al. 2004) have detailed the occurrence of punctuated and prolonged drought events between A.D. 524 and 645. Such droughts would have disrupted irrigation systems and led to the abandonment of marginal fields. Droughts also would have lowered the groundwater table, which was important for *mahames* agriculture (Watson 1979) and the fecundity of natural springs. In the inextricable link between culture and environment in the Chicama

Valley, droughts likely would have been responsible for settlement pattern changes and mitigating agricultural strategies.

In the past, dune encroachment also caused the abandonment of agricultural fields and shifts in settlement patterns (Moseley et al. 2008). Dunes can be related to increased aridity from droughts associated with the La Niña phases of the ESNO cycle. La Niña events cause ocean levels to drop, exposing beach sands that subsequently are carried farther into Premontane and Scrub Desert Zones by trade winds (Shafer Rogers et al. 2004). Tectonic uplift can also elevate and strand beach sand that is then blown inland. It has been proposed that seismic activity and tectonic uplift caused the movement of sand dunes into the southern Moche Valley. These dunes are found overlaying Moche IV materials at the Huacas de Moche (Moseley and Deeds 1982). The same processes likely would have occurred in the Chicama Valley and could possibly be the cause of the dunes found around Cerro Azul.

The angle of subduction of the Nazca plate under the South American plate along the Peruvian coast is low, making volcanism non-existent in the central Andes (Cobbing 1981). However, earthquakes, and periodic tsunamis resulting from earthquakes are quite common along the subduction zone. These events would have periodically caused disruption and damage to coastal regions. Evidence for earthquakes has been documented at Moche sites (Franco et al. 2003). In the 1940s Junius Bird noted tsunami sediments on Huaca Prieta in the Chicama Valley (Bird et al. 1985). However, the issue has not been revisited recently and tsunamis remain understudied for the northern coastal regions (see (Winsborough et al. 2012) for a recent study on the central coastal Peru).

Overall, the Chicama Valley presents many natural environmental constraints. However, past civilizations developed and thrived there. In the following section I present an overview of the past cultural developments in the valley and how they related to the larger developments in the Peruvian Andes in general.

## North Coast Cultural Settings Before and After the Moche

Andean archaeological cultures are temporally separated into periods and horizons. Periods are characterized by marked regional isolation, while horizons correspond to expansion, where communication flowed more freely over large areas (Rowe 1962). The Rowe-Menzel System, as it has come to be known, divides the Andean past into seven phases. These are listed below in Table 2.4.

**Table 2.4: The Rowe-Menzel System of Andean Phase categorization.**

| Phase | Dates |
|---|---|
| Preceramic Period | 11,000 – 1800 BCE |
| Initial Period | 1800 – 800 BCE |
| Early Horizon | 800 BCE – 0 |
| Early Intermediate Period | 0 – A.D. 600 |
| Middle Horizon | 600 – A.D .1000 |
| Late Intermediate Period | A.D. 1100 – 1438 |
| Late Horizon | A.D. 1438 – 1532 |

It should be noted that the Rowe-Menzel System offers a general framework for cultural history in the Andes. Past societies that used ceramics existed in the Preceramic, and non-ceramic-using societies persisted well into the Initial Period (see Stothert 1985). The major cultural developments of each phase are described below, with special attention given to developments on the north coast of Peru, and the Chicama Valley in particular.

The Preceramic Period (11,000 – 1800 BCE)

The first humans arrived in South America between 13,000 and 14,000 years ago (~11,000-12,000 BCE) (Dillehay 1989). On the north coast of Peru, where the modern shoreline is 10 km removed from the Late Pleistocene/Early Holocene coastline, early sites include Amotape Campsites, which date from 9,000-6,000 BCE (Richardson 1981). Other sites are those of the Paiján complex (9,000-7,000 BCE). These include sites in the Chicama and Moche Valleys, which are have been categorized based on narrow-tipped projectile points known as Paiján points (Chauchat 1988). Paiján points are plentiful in the Pampa de Paiján, just north of the Chicama Valley, and one was uncovered during excavations at Licapa II. Recent research on the Brujo terrace in the Chicama Valley suggests that humans may have been in the area as early as 13,720-13,260 cal BP (~11,720-11,260 BCE), as evidenced by worked pebbles, sea lion and fish bones, and cracked shells. By 8,979-7,500 cal BP (~7,000-5,500 BCE), maritime foragers and incipient gardeners were already intermittently occupying the Brujo terrace (Dillehay et al. 2012).

Between 6,000-4,500 BCE, people along the coast near the Chicama Valley were settling in permanent villages and experimenting with cultigens like cotton, maize, peanuts, chenopodium, chili pepper, and squash (Dillehay et al. 2004; Quilter 1989; Quilter and Stocker 1983). Huaca Prieta is a preceramic earthen mound on the El Brujo terrace in the Chicama Valley that contains some of the earliest cotton textiles and pyroengraved gourds (Bird et al. 1985) found in South America. Recent research has shown that mound construction began between 7,572 and 6,538 cal BP (~5,600-4,500 BCE) and terminated by 4,000-3,800 cal BP (~2,000-1,800 BCE) (Dillehay et al. 2012:63-65).

Around 3,000 BCE people started to erect large structures on the coast (Haas and Creamer 2006; Quilter 1985; Shady 2006). These structures have been classified to as "ceremonial centers," and by 2,500-1,800 BCE there is evidence for increased social complexity and diversity, manifested in large-scale monuments, residential aggregation, and burial practices that reinforced social differentiation (Burger and Salazar Burger 1985; Feldman 1985; Haas and Creamer 2006; Pozorski and Pozorski 1987; Quilter 1991; Shady 2006).

Initial Period (1800 – 800 BCE)

By 1,800 BCE (and earlier in places such as Ecuador [Stothert 1985]), ceramics and weaving were becoming commonplace, and monumental constructions, such as massive U-shaped structures, increased. Widespread farming, herding, and long-distance economic interactions also increased during this period (Burger and Salazar-Burger 1991; Pozorski and Pozorski 1987; Quilter 1985). The early Initial Period in the Chicama Valley is not well documented. However, my reconnaissance in the valley has noted a large U-shaped platform structure with outlying shell middens near the coastal town of Malabrigo that may date to this time period.

The cultural developments of the early Initial Period lead to the development of the Chavín religious cult, which began in the Central Highlands site of Chavín de Huántar during the later Initial Period (1,100-1,000 BCE) (Kembel 2008; Rick et al. 2011). Tello (1943) claimed that the Chavín cult signifies the beginning of large-scale integration between highland and coastal of populations, as evidenced by the appearance of shared iconographical themes and architectural styles spread over a wide expanse of the Andean region.

The north coast manifestatation of this culture became known as Cupisnique. Originally called "coastal Chavin" (Bennett 1939), Larco (1941) later made distinction between the two cultures based on ceramic assemblages found in the Quebrada de Cupisnique in the Chicama Valley. However, Larco published his findings after Tello (1922). By then, the mother culture concept had already been bestowed upon Chavín and Cupisnique subcategorized as "coastal Chavin." Nevertheless, Larco saw Cupisnique as an independent coastal development out of which developed the subsequent Salinar, Moche, and Chimu cultures, all of which shared elements of the Cupisnique tradition (most notably the decapitator god and the stirrup-spout bottle). Recent research has supported Larco's claim and has shown that the Cupisnique archaeological culture emerged on the north coast prior the Chavín cult expansion and sometime around 1,600 BCE (Nesbitt 2012).

The debate between Tello and Larco was largely a reflection of political and cultural tensions that existed between the two men (Burger 1993). Both had political agendas and archaeology became a sounding board. As a nationalist, Tello envisioned Chavín as a uniting factor that could link disparate ethnic populations across Peru. Larco, on the other hand, saw the north coast of Peru as a powerful political entity, with its own unique history. These political agendas and rivalries have been long-lived. The longevity and expansion of Chavín and its relationship to Cupisnique is still being debated even as new scholars (Burger 1981, 1995, 2008; Nesbitt 2012; Rick et al. 2011) labor to rectify radiocarbon sequences. However, independent of their individual developments, the art and religious representations of Chavín and Cupisnique were strongly linked by the Early Horizon.

Early Horizon (800 BCE – 0)

Between 900 and 800 BCE, Burger (1995) notes a shift in settlement patterns on the coast of Peru. Sandweiss et al. (2001) attribute this change to an increase in El Niño events between 1,200 and 800 BCE, but Chavín influence could just as easily have been a contributor (Nesbitt 2012). On the north coast, at Initial Period Cupisnique sites like Caballo Muerto, aspects of the Chavín cult ideology become prolific in ceramics and architecture during the Early Horizon (Nesbitt 2012). However, these ideals were not adopted in all areas uniformly. In some places like the Casma Valley, integration and adoption of Chavín cult ideals seemed to have been resisted or even altogether rejected (Pozorski and Pozorski 1987).

Whether Chavín cult ideals were accepted or not, Chavín influence on the North Coast may ultimately have led to a decline in monumental constructions due to an increase in concepts and practices of social inequality (Nesbitt 2012). The reorganization of social ideals may have led people to invest less time in social institutions like public works projects and more in the production of prestigious trade wares (Nesbitt 2012). Whatever the case, very few monumental sites on the North Coast continue to be used or constructed in the late Early Horizon, a pattern that continued into the Early Intermediate Period.

Early Intermediate Period (EIP) (0 – AD 600)

The demise of Chavín and Cupisnique remains a matter of debate. Radiocarbon sequencing continues to be worked out (Burger 1995, 2008; Rick et al. 2011), but generally accepted dates for the collapse of Chavín and Cupisnique are between 400 and 200 BCE. During this time, much of the Andes enter a sort of "dark age" (Quilter 2010b:25), characterized as such because of the lack of monumental architecture and lack of new artistic styles. Settlement pattern surveys also note low population densities at this time (Billman 1996; Willey 1953; Wilson 1988).

New regional art styles linked to new ideologies appeared between 0 and A.D. 300. These included Pucara and Tiwanaku in the south-central highlands, Recuay and Cajamarca in the northern highlands, Lima and Niveria on the central coast, Nasca on the south coast, and Salinar, Gallinazo, Vicús and Moche on the north coast. Although material culture from groups like the Moche and Nasca are expansive geographically, the EIP (0-A.D. 600) often is characterized by marked regionalism.

Settlement survey data from the north coast of Peru prior to the EIP is scant at best. However, from the EIP and later times we have good data so much more can be deduced about the nature of EIP archaeological cultures. Salinar emerged on the north coast around 200 BCE as the first major archaeological culture after the demise of Cupisnique (Brennan 1980; Zoubek 1998). Salinar ceramics are found mostly in the Chicama, Moche, and Virú Valleys, and they tend to be red wares with cream slip. The Salinar tradition is considered a direct antecedent to the Moche ceramic tradition. Survey data from this period, which lasted from roughly 200 BCE to 200 AD, suggests that these were stressful times. People lived in protected, upper-middle valley settlements under the constant threat of attack (Billman 1996; Willey 1953; Wilson 1988). The site of Cerro Oreja in the Moche Valley attests to this unrest. It is located on a large, well-protected, and highly defensible ridge and contains densely packed architecture that contained administrative, economic, and religious facilities that perpetuated an ideology of social stratification (Brennan 1980).

Scholars generally accept that the Gallinazo culture followed the Salinar. Gallinazo is identified primarily by its negative painted elite pottery[3]. The negative painting style originated in the Virú Valley (Fogel 1993) and can be found in other settlements along the north coast, like in the site of Jatanca in the Jequetepeque Valley (Warner 2010). This pottery style is known as the Virú Negative style, but is also referred to as Gallinazo (Strong and Evans 1952). There has been a recent movement to only call this negative painting style "Virú Negative" rather than Gallinazo because "Gallinazo" also refers to a domestic ceramic style that is now known to have had great longevity on the north coast of Peru and is not acceptable as a temporal or phase marker (Millaire 2009). This domestic Gallinazo ceramic is called Castillo ware and includes Castillo Incised, Castillo Modeled, and Castillo Plain.

The confusion and conflating of the Virú Negative style and the Castillo wares as markers of the same political entity first occurred when the two styles were found together in the Virú Valley below Moche deposits (Bennett 1939, 1950; Larco 1945). The two together were considered markers of the pre-Moche Gallinazo culture. This conflation has created many subsequent problems with understanding Gallinazo and its association with Moche.

[3] The negative painting technique is when wax is applied and/or other organic materials are used to shield the vessel while firing. This creates a negative impression on the pot. Carbon may have then been added to the fire-resisted areas to darken them.

Unlike Virú Negative wares, which are mainly found in the Virú Valley, but with some exceptions (cf. Warner 2010; see Makowski et al. 1994 on Vicús), Castillo wares are found at many Moche sites all along the coast of Peru. Because they were found in contemporaneous context, by default the distribution of Castillo wares also implied the distribution of the Virú Negative style, even in its absence. Thus, when Castillo wares were identified in far-afield places, the distribution implied (incorrectly, as it turns out) evidence for Gallinazo people residing at these sites prior to Moche expansion and conquest.

Settlement pattern surveys conducted in many north coast valleys relied on Castillo ceramics to support the claim that settlement patterns shifted from the upper valley reaches during Gallinazo times to the lower valley after the Moche conquest (Leonard and Russell 1992; Billman 1996; Willey 1953; Donnan 1973; Wilson 1988; Prolux 1968, 1973). However, Castillo ware is now understood as domestic ware made and used by various groups during the EIP, and it now is accepted as part of a larger "North Coast Tradition" (Millaire 2009; Quilter 2010a). Therefore, domestic settlements in the upper valley can no longer be attributed to only one time period. In order to build stronger chronologies and correct cultural associations, settlement patterns for each valley need to be reevaluated in light of this new understanding.

Furthermore, recent research at the site of Huaca Santa Clara, where Virú Negative and Castillo wares are found together has shown that the people living here and using the Virú Negative pottery occupied the site from 10 BCE until 670 AD, both preceding and coeval with Moche dates from other sites, and with no evidence for ever being under the control of the Moche (Millaire 2009, 2010). This demonstrates that the people using Virú Negative wares were likely a separate polity on the north coast that predated, but also coexisted along side the Moche.

Millaire (2009) contends that Gallinazo and Castillo wares should not be understood as early cultural phenomena or as representatives of distinct political entities. Rather, Millaire believes they should be understood as evidence of a popular north coast substrate, within which a number of political entities developed. This would include the Moche and other local traditions, like Vicús (Makowski et al. 1994), which is an archaeological culture north of present-day Piura that is characterized by Moche-like ceramics, metalwork and other material culture.

More recently, research (including my own) has shown that the Moche comprised a variety of local polities using regionally variable ceramics (Donnan 2011). Moche material culture changed over its 700 years of development until it eventually collapsed sometime around A.D. 900. Concurrently with this collapse, highland Middle Horizon cultures like Wari begin to assert influence on the north coast. A more detailed account on the history, development and collapse of the Moche follows in the next chapter.

<u>Middle Horizon (600 –1000 AD)</u>

Between 600 and 1000 AD, the Tiwanaku and Wari cultures rose to prominence in the south-central and central Andean highlands (respectively). In many respects, their influence reconfigured religion and political rule in much of the Andes. Tiwanaku is often described as a heterogeneous society, and the major settlement was Tiwanaku, in present-day Bolivia (Kolata 2003; Janusek 2004). Tiwanaku influenced large portions of the *yungas* region on the eastern slope of the Andes (southern Bolivia), the Atacama Desert (northern Chile), and the Moquegua Valley (Peru).

The nature of Wari is currently under considerable debate (Jennings et al. 2010). However, it was once considered a hierarchical, secular, and militaristic society centered in the central highland around the modern town of Ayacucho whose influence spread out over much of Peru (Schreiber 1992). Wari influence is seen on the north coast where Wari ceramics have been found in funerary contexts at San José de Moro, Huacas de Moche, and in sites in the Chicama Valley (Castillo 2001). Some scholars attribute the collapse of Moche to the advances of Wari and other highland cultures, such as Cajamarca (Bawden 1996). As Moche wanes, Wari and Cajamarca features are more prevalent in the ceramics and other material culture on the north coast. However, the relationship between Wari, Cajamarca, and Moche remains unclear and is currently under investigation (Luis Jaime Castillo, personal communication).

Late Intermediate Period (LIP) (A.D. 1100 – 1438)

What happened on the north coast directly following the collapse of the Moche remains somewhat unclear. We do know that sometime around 900 AD the Lambayeque, or Sicán archaeological culture emerged in the Lambayeque Valley around the sites of Batán Grande, Túcume and Chotuna (Heyerdahl et al. 1995; Shimada 1995). Lambayeque influence is seen in the Jequetepeque and Chicama Valleys as well. Lambayeque is recognized by a particular style of ceramics, mainly reduced black ware with Wari and/or central coast influences, such as the double spout and bridge ceramic form. Exquisitely manufactured metal objects in a particular style also are hallmarks of this archaeological culture. Many of the attributes of the Lambayeque developed directly out of the Moche period. Huacas continue to be erected and used and many of the same iconographic themes, such as reed boats, continued to be portrayed.

Also around 900 AD the Chimu archaeological culture emerged south of the Pampa de Paiján in the Moche Valley and centered on the large urban site of Chan Chan. Chan Chan consists of large architectural compounds with enormous walls called *ciudadelas*. Today nine of these survive, although there are traces of one or two others (Kolata 1982). The architectural planning used at Chan Chan is very different from earlier Moche huaca centers, which has lead many scholars to suggest that the Chimu were a more secular society compared to the Moche (Mosely and Day 1982; Moore 1996; Uceda 2010). However, this pattern of moving toward a more secular system of organization is noted for the late Moche period and Chimu can be understood as a direct development out of the Moche period with much cultural continuity (Bawden 2001; Uceda and Tufinio 2003).

Like Lambayeque, Chimu is related to a specific form of art, often portrayed on metal and ceramic objects. Although unique, Chimu art also draws on much of the same imagery and designs seen in Moche art. The Chimu created, or at least maintained from earlier times, an elaborate road system that linked major sites such as Chan Chan, Chiquitoy Viejo in Chicama, and Farfan and Talambo in Jequetepeque (Conrad 1974; 1990; Kosok 1965; Mackey 2003; Mackey and Klymyshyn 1990). The Chimu expanded north and eventually overtook the Lambayeque polity around 1370 AD. In turn, the Inka conquered the Chimu in 1470 AD.

<u>The Late Horizon (1438 – 1532 AD)</u>

The beginning of the Late Horizon coincides with the expansion of the Inka Empire from its capital city of Cuzco in 1438. At its apogee, the Inka Empire, known as *Tawantinsuyu* (or the land of four parts), covered an area that extended north and south over 4,000 km along the length of the Andes (D'Altroy 2002). The provinces were linked to the capitol and other adjacent provinces by a system of roads that spanned some 30,000 km (Hyslop 1984).

The empire consisted of hundreds of polities and ethic groups, and was divided into 80 provinces that often cut across ethnic boundaries. These boundaries were drawn in arbitrary fashion so as to suit the needs of the Inka (Malpass 1993). The Inka incorporated groups into their empire by conquering weaker groups, and then training those groups to aid in the conquest of stronger ones (D'Altroy 2002). In provinces with no central authority or with a weak infrastructure, the Inka imposed their own and a governor was appointed to manage tribute and trade, which flowed to Cuzco (Malpass 1993). In regions with developed infrastructures, such as the north coast, the Inka relied on local nobility.

The Inka conquered the Chimu in 1470, but the Chimu political and organizational systems were left in place (Netherly 1977, 1984; Ramírez 1996). By 1532 the relationship between the Chimu and Inka was interrupted by the incursion of the Spanish. This incursion marks the end of the prehistoric era. Because the Inka did not destroy north coast organizational principles, aspects of the system were recorded during colonial times. If many of the cultural characteristics carried over from Moche times into Chimu times, it is possible that some of the characteristics of Moche organization can be gleaned from the colonial records. Therefore, looking to Colonial models of indigenous organization may allow us to better infer Moche political organization. This process will be elaborated upon in Chapter 9.

## Natural and Cultural Setting Concluded

In this chapter I presented natural and cultural factors that will be built upon to construct a history of Moche studies. This review demonstrates that the natural factors of the north coast of Peru create a dynamic and challenging setting for sustaining human life unless effectively managed. Although it can be difficult to live here, many past cultures and civilizations developed ways to overcome the environmental challenges. These included the domestication of a variety of animals and plants, the development of complex irrigation systems, trade, and communication networks, and effective exploitation of the bounty of marine resources. Ultimately overcoming the natural challenges lead to an environment where past societies, including the Moche, thrived. In the following chapter I review previous research about the Moche in order to contextualize my work at Licapa II.

# CHAPTER 3

## PREVIOUS MOCHE RESEARCH

In Chapter 3, I will review the history of Moche studies as it relates to Licapa II. I will first examine the early excavations in the region as well as the development of the standard ceramic sequences used to contextualize artifacts and architecture. I will then discuss seminal projects undertaken in the Moche region from which researchers have gleaned much of our understanding of Moche political dynamics. I will also discuss the impact of iconographic studies of Moche art and how this can be related to the archaeological evidence on Moche. In my review, I pay particular attention to Huacas de Moche, El Brujo, and San José de Moro as my analysis draws heavily on architectural and ceramic remains uncovered at these sites. Finally, I will review the state of research regarding the material and political differentiation between the northern and southern sites within the Moche realm.

### The Formative Years of Moche Studies: The Colonial Period-1980s

#### The Early Years

Centuries of looting have significantly impacted the majority of Moche huaca sites. Much of this looting began with the arrival of the Spanish and their quest for gold. Sites and structures, such as Huaca Cortada (Cut Huaca) at El Brujo and Dos Cabezas (Two Heads) in the Jequetepeque Valley bear their names because of the scars left by these colonial endeavors. Looters carved a large cut, through the middle of the Huaca

Cortada on the southern side. A massive hole was dug into the center of the pyramid at Dos Cabezas, effectively giving the one pyramid the appearance of having two mounds or heads. Most notoriously, the Spanish re-directed the course of the Moche River to erode the side of the Huaca del Sol to expose buried gold. How much they found, if any, remains a mystery, but currently only one-third of the original edifice is extant.

It was not until the mid-nineteenth century that scholars became interested in systematically studying Moche remains. In the 1860s Ephraim G. Squier visited the north coast of Peru. During this time, he completed drawings of the Huaca de la Luna and the main platform mound at Pañamarca in the Nepeña Valley in addition to collecting specimens of human remains from these sites (Squier 1877). His pioneering work set the stage for scientific archaeology in much of the Andes.

In 1892, Squier was succeeded by Max Uhle on the north coast of Peru. Uhle was a German archaeologist familiar with the work of Old World archaeologists, such as Flinders Petrie and Heinrich Schliemann who are recognized for defining chronologies rather than just classifying and describing archaeological finds. Uhle excavated graves at the Huacas de Moche and was the first to create a chronology for the north coast. He observed stylistic changes in the recovered pottery and identified three successive stages: Moche, referred to as proto-Chimu; Wari, which he called Tiahuancao (Tiwanaku)-influenced; and Chimu (Kroeber 1925).

In the early 20$^{th}$ century, Kroeber examined Uhle's collection, then housed at the University of California, Berkeley and published much of Uhle's findings (Kroeber 1925). Kroeber was also the first to recognize the difference between the regions north and south of the Pampa de Paiján. He noted that mounds north of the Pampa de Piaján were found inside cultivated fields, whereas south of the Pampa de Piaján the predominant pattern was for huacas to abut *cerros*. He also remarked that northern huacas were characterized by long zigzagging ramps and constructed with adobe chambers filled with dirt or rubble (Kroeber 1925). In the valleys south of the Pampa de Paiján, Kroeber noted segmented adobe architecture, which Hastings and Moseley (1975) later suggested was the result of an imposed labor tax requiring work gangs to produce a certain number of marked bricks laid in vertical columns. Although now known to be architectural differences between the north and the south are somewhat more complex, there remains some truth to Kroeber's observations (see Shimada 1994).

In addition to his architectural observation Kroeber (1963) called for the separation of time and style in ceramic analysis, which Moche researchers continued to conflate until quite recently. This is in part due to a strict adherence by scholars to the five-phase sequence created by Rafael Larco Hoyle (1948), to be discussed below. Recently, there have been many advances in understanding the differences in time and style for Moche ceramics as will be discussed in the final section of this chapter (Benson 2003; Donnan 2011; Castillo and Donnan 1994a; Millaire and Morlion 2009).

Rafael Larco Hoyle: The Father of Moche Studies

Although Kroeber's work was ground-breaking and remains a key part of our current understanding, Rafael Larco Hoyle is considered to be the father of Moche studies. Larco was a collector and amateur archaeologist whose family owned a large sugarcane hacienda at Chiclín in the Chicama Valley (Larco 1938, 1941, 1945, 1948, 1966, 2001). Larco was a Cornell University educated agronomist who was particularly detailed in the excavations he conducted on his property and throughout the Chicama

Valley. He photographed, drew, measured and documented his findings and published his interpretations; however, many of his field observations or excavation locations have never been put into print (Shimada 1994).

Larco and his family amassed an extensive pottery collection from 1925 until his death in 1966. This collection, housed in the Rafael Larco Herrera Museum in Lima, includes over 40,000 vessels mainly of Moche origin, but lacking detailed provenience. Without this information it is difficult to understand the role they played in Moche society, although we can assume that most of the complete vessels were exhumed from funerary contexts.

Larco was the first to use the term “Mochica” as a replacement for proto-Chimu. His five-phased ceramic sequence (Moche I-V) was used for the next 50 years as the basis for understanding Moche development (Larco 1948). The five phases were originally thought to track Moche development through time. Larco’s classification is currently being revised as recent research has shown that it does not represent a true chronology corroborated with radiocarbon dates (Lockard 2009). It does, however, track stylistic differences in the Moche world. What these different styles represent is currently the topic of recent investigations.

The five-phased sequence is based on changes in the shape of the spout on stirrup-spout bottles as well as changes in the form of the stirrup-spout vessel (see Figure 3.1 and Figure 3.2). Larco identified this five-phased sequence based on his excavations in the Chicama Valley. However, Larco never stratigraphically excavated the entire sequence in order. More recently, other attributes, such as changes in the iconography on the vessels that correspond to Larco's phases has been identified and will be detailed in Chapter 6 (Donnan 1976:54–58; Donnan and McClelland 1999; McClelland et al. 2007).

In the Larco sequence, the upper part of the spout in Phase I is short and thick with a pronounced lip. Phase II spouts also have lips, but though they remain short and thick, they are less pronounced. Additionally, most of the vessel chambers of Moche phase I and II vessels are oblate, but some are spherical, cylindrical and angular (see Figure 3.2). Phase III vessels have little to no lip and flare out, while the chambers tend to be taller and more spherical than the Phase I/II vessels. Phase IV spouts have nearly parallel vertical sides and are taller and larger than the other phases. The chambers of phase IV spouts continue to be mainly spherical in shape but they are much larger than the phase III vessels. Phase V is characterized by inward tapered spouts that are shorter than Phase IV. Vessels are ovoid in shape and have flat bases. However, some Moche V vessels identified by Larco have curved or angled equators that divide the vessel chamber into two halves and contain ring bases. These vessels are no longer considered Moche V and are now classified as northern Late Moche Moro style. This will be elaborated on below when I discuss the site and findings at San José de Moro (Castillo and Donnan 1994a).

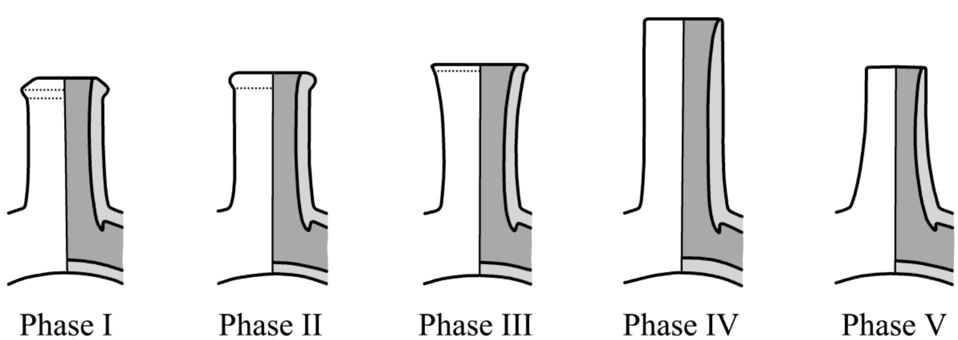


**Figure 3.1: Larco ceramic sequence based on the shape of the spout.**

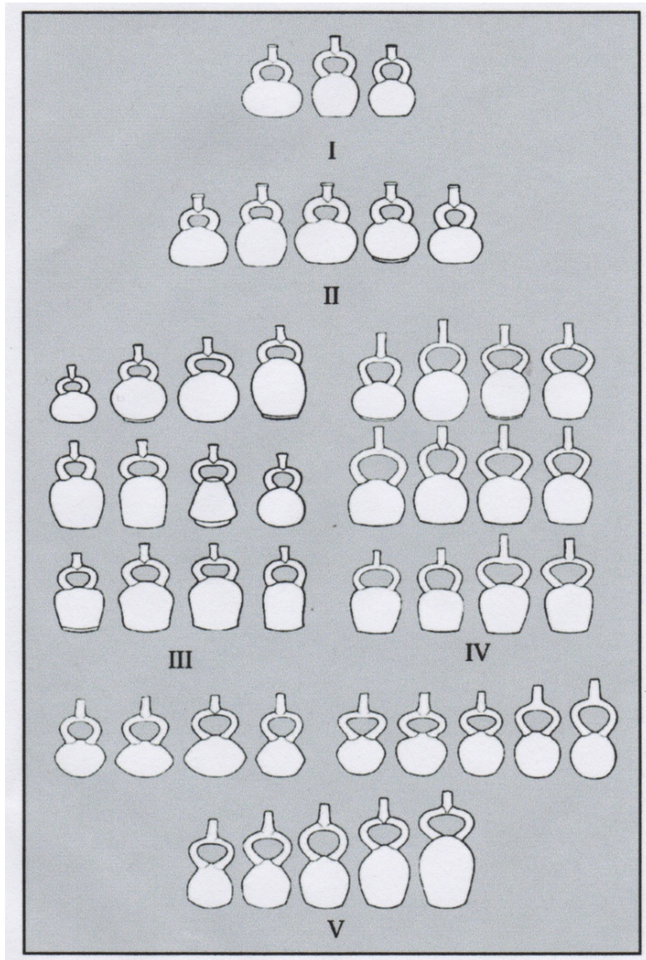


**Figure 3.2: Larco ceramic sequence changes in vessel form (Shimada 1994:21).**

Many of these stirrup spout vessels have elaborate, realistic sculpted art and finely painted designs known as fineline painting. The fineline vessels are decorated primarily with red paint on cream slip and depict narrative scenes of combat, human sacrifice, sexual acts, childbirth, dancing skeletons, craft production, hunting, burial ceremonies, feasting, and plants and animals. The quality of the designs and thinness of the line increased between Moche I and V. It is worth noting here that Phase V fineline vessels may also contain fine geometric designs as well as fine figurative designs.

Larco was a vehement promoter of the Moche as a highly advanced civilization and a conquest polity. This view is in line with his north-coast centric prospective of the Cupisnique vs. Chavin debate that he had with Tello, during which he maintained that the north coast was a powerful place of cultural development and in many ways more advance than the rest of Peru (see Chapter 2) (Burger 1993). Larco (2001) saw the Moche as a kingdom with a supreme ruler who governed lesser lords and subjects. He partially based this view on the identification of specific individuals portrayed on "portrait head" vessels (see Donnan 2004). Furthermore, Larco upheld the idea that the five-phased sequence originated in the Chicama Valley and Moche Valley heartland and spread out until it was seen in all valleys along the north coast. The particular phase of Moche pottery that first appeared in a valley would mark the relative time period when the Moche conquest occurred. This idea, first developed by Larco, became the basis for the Moche conquest state paradigm that endured until the early 2000s. In some cases it is still the paradigm scholars work within today.

The Virú Valley Project

This view of the Moche as a powerful and expansive entity was reinforced by one of the most influential archaeological projects in Peruvian history, the Virú Valley Project, which was directed by William Duncan Strong of Columbia University and Wendell Bennett of Yale University (Strong and Evans 1952). The project commenced in 1946 and was designed to look at long-term cultural development in Peru. Project members included Gordon Willey, then a graduate student at Columbia, who conducted a settlement pattern survey of the valley. In this survey he noted that Gallinazo ceramics, specifically Castillo and Virú wares, were supplanted by what they called the

“Huancaco” style (Willey 1953). Significantly, every cream-on-red, or red-on-cream ceramic sherd encountered was deemed “Huancaco,” or the local Virú version of Moche, thus establishing a prominent Moche presence in the Virú Valley that abruptly spread and superseded the Gallinazo wares. This pattern was interpreted as the Moche incursion of the Virú Valley and displacement of the earlier Gallinazo culture. Therefore, it was during the 1940s when Larco’s ideas were “proved” by the Virú Valley Project and the Moche conquest state concept was reinforced.

But as noted in the previous chapter, Gallinazo as a widespread pre-Moche culture has been recently questioned (Millaire and Morlion 2009). Furthermore, Bourget (2010) suggests that Huancaco was not a Moche center after his excavation there. He proposes this because no distinctively Moche religious imagery is seen on ceramics or murals. However, the general form and decoration on the ceramics generally conform to the style previously considered Moche. Nonetheless, based on evidence from Huancaco, along with other work in the valley (Millaire 2009, 2010) the nature of the Moche conquest in Virú has recently been contested.

Although recent investigations are challenging the nature of Moche presence in Virú, there is still definitive evidence to show that Moche people were there. During the Virú Valley project researchers uncovered actual Moche remains at the site of Huaca de la Cruz. Here they found the tomb of the Warrior-Priest, the most elite and elaborate Moche burial to date (Strong and Evans 1952:150-167). This tomb contained five separate bodies and associated Moche materials (stirrup-spout vessels, metal objects, carved wooden staffs, headdresses, masks). Researchers have interpreted the principal individual in this tomb to be a god-impersonator. This will be further addressed below.

The survey methodology employed by Gordon Willey set precedence for survey projects for years to come both in Peru and internationally. The Virú Valley project's interpretation based on these survey methods was also accepted as the standard pattern for north coast Peruvian valleys.

Post- Virú Valley Project Surveys

After World War II a number of other Moche projects commenced. Christopher Donnan conducted a survey in the Santa Valley much in the same vein as Willey's previous work (Donnan 1973). Donald Proulx (1968, 1973, 1985) followed suit in the Nepeña Valley. Both Donnan's and Proulx's projects largely confirmed the same patterns noted by Willey and further promoted the expansive view of the Moche. This can be summarized as follows: (1) populations in each valley reached their maxima shortly before the appearance of Moche style ceramics and architecture. (2) The population maxima coincided with substantial growth of irrigation systems in the lower valleys. (3) Moche sites first appeared in the mid-to-lower valleys and ceramics were located primarily in cemeteries and ceremonial centers. (4) Site types became more diverse, including an increase in agglutinated habitation sites during the Moche phase. (5) Cemeteries greatly increased in number in Moche times.

The same patterning as seen in Virú, was noted for all of the southern valleys subsequently surveyed, including work built off of Proulx's project for Nepeña (Daggett 1983), Donnan's for the Santa (Wilson 1983, 1988), and new surveys in the Moche (Billman 1996, 2002) and Chicama Valleys (Leonard and Russell 1992). Most of the settlement pattern research was based on few to no radiocarbon dates and little to no correlation of architectural features within and between valleys. Instead, the appearance of Moche style ceramics and presumed ceremonial centers themselves were thought to chronicle the expansion of the Moche. Yet, there was no strict criteria in defining a site as Moche, which was decided on based on the opinions of each individual researcher. Moche ceramics were used as time markers, because the sequence developed by Rafael Larco Hoyle was assumed to apply uniformly to the entire north coast. Recent research has seriously undermined this view and these data should be reevaluated (Quilter and Koons 2012).

The reevaluation of the Castillo Series, as discussed in Chapter 2, has shown that it was contemporary with Moche (Millaire and Morlion 2009). The early settlement pattern surveys assumed that Castillo wares were Gallinazo and, therefore, earlier than Moche. The prevalence of Castillo wares in the upper-lower valleys meant that settlement patterns in the earlier phase were up-valley, which was interpreted as more defensive in nature. When the Moche arrived settlement patterns shifted down valley. This down-valley shift is said to have reflected the expansion of Moche as a *Pax Mochica* where there was no longer need for defensive upper-lower valley sites (Moseley 1992). Since we now know that Castillo wares were much more wide-spread in time and space, this means that the models of population increase, up-valley-to-lower valley settlement shifts, and the "arrival" of the Moche, who built huacas in the lower valleys, no longer can be supported with the data that were once used. Therefore, the observed patterns need to be reevaluated in light of this recent revelation. Furthermore, the reanalysis of radiocarbon dates (Lockard 2009; Quilter et al. 2012) and recognition of the limitations of the Larco sequence, as will be explored more below, undermine previous models of Moche expansion.

Chan Chan – Moche Valley Project

The Chan Chan - Moche Valley Project (CCMVP) directed by Michael Moseley between 1969-1974, was the next large-scale research project in the Central Andes after the Virú Valley Project. CCMVP research was based on the well-entrenched assumption of Moche as an expansive state. While the greatest attention was devoted to the Chimú era Chan Chan complex, extensive work also was carried out at the Huacas de Moche (Moseley and Day 1982; Topic 1977, 1982). Theresa Lange Topic (1977, 1982) conducted most of the work at the Huacas de Moche and was the first to declare that the Huaca de la Luna was a religious temple and the Huaca del Sol was an administrative building, though at the time no excavation was allowed on the huacas. Instead, she excavated some domestic and residential structures between the huacas, and along with other researchers, including Shelia and Thomas Pozorski, Robert Feldman, Christopher Donnan, Richard Keatinge, and Charles Hastings excavated burials in the plain between the two huacas (see Donnan and Mackey 1978) to further develop the expansive state paradigm (Topic 1982). They focused on excavating Moche II-IV burials, identified by their associated ceramic assemblage, and demonstrated that the site was most heavily occupied during Moche III and IV and was abandoned by Moche V.

Hastings and Moseley (1975) also argued for the expansive state idea with their analysis of Moche adobe brick markings and segmented construction techniques. They argued that the maker's marks identified the labor of work groups, who were required to produce a certain amount of adobes and construct particular sections of the huacas. The size of the huacas and the number of distinct marks indicated that the Huacas de Moche had to draw in work parties from other valleys, such as the Chicama, and thus was indicative of the political domination of the Huacas de Moche.

During the CCMVP Garth Bawden (Bawden 1977, 1982) worked at Galindo, a Moche V site in the Moche Valley. Galindo is a sprawling walled urban settlement with compounds and small huacas. Bawden proposed that after the collapse of the Huacas de Moche at the end of Moche IV, at the time assumed to be around 550 AD, the population moved to Galindo and adopted the new Moche V style. He also suggested that at this same time the capital of Moche was moved from the Huacas de Moche to Pampa Grande in the Lambayeque Valley. Pampa Grande is a large Moche V settlement with an urban sector, storage facilities, *montículos,* and was dominated by the large Huaca Fortaleza (Haas 1985; Shimada 1994). The idea that the Moche capital was moved from the Huacas de Moche was based primarily on stylistic changes in ceramic. Moche V ceramics are distinguishable from their spouts, but also by fineline designs. At Galindo and Pampa Grade, geometric finelines, only found in Moche V, characterized the ceramic assemblage. No radiocarbon dates were run to confirm this shift in settlement, and later research based on absolute dates demonstrated problems with this theory, as will be described below. Kent Day, who was a member of CCMVP, continued to work at Pampa Grande after the end of CCMVP through the Royal Ontario Museum. Later, Izumi Shimada continued the long-term project at the site (Shimada 1994).

After the end of the CCMVP project, large-scale survey and excavation projects in the region lulled until the 1990s. This was in large part because of the political climate at the time and the frequency of problems surrounding The Shining Path guerrilla movement attacks (Starn et al. 2005). However, during this time there was an increased interest in studying the iconography seen on the ceramic vessels as a means of shedding light on aspects of Moche life.

### Moche Iconography

In this section I review some of the seminal studies of Moche iconography. The art and iconography are one of the most impressive aspects of Moche society. The representational portrayal of living and mythical beings and acutely detailed renditions of objects, animals and plants and has attracted the attention of scholars and lay people for years. Moche art is mainly found on portable ceramic vessels, but murals, metal objects and textiles are also a medium where this art it is seen.

In 1968 Christopher Donnan began the development of the Moche Archives at the University of California Los Angeles, which consists of thousands of drawings and photographs from painted and sculptured ceramic vessels. The majority of these vessels are unprovieniced. Scholars such as Donnan (1976, 1978), George Bankes (1980), Elizabeth Benson (1972), Yuri Berezkin (1980, 1987, 1990) Anne Marie Hocquenghem (1987), Jügen Golte (2009), Gerdt Kutscher (1950, 1955, 1983), among others (Bourget 2006; Bourget and Jones 2008; Jackson 2008; Quilter 1990, 1997) have analyzed these drawings, and others like them, in order to formulate theories on Moche religious beliefs, and economic, social, and political life.

For many scholars, Moche art is seen as charged with symbolism that can be interpreted because of its realistic nature. Following earlier scholars such as Kutscher (1950), Donnan (1978) recognized that many of the scenes were mythological and composed of particular characters. He identified scenes comprised of specific characters and actions as themes. Donnan (1978) also noted that certain themes, such as those depicting agriculture, irrigation and construction were absent. He claimed this further attested to the mythological nature of Moche art. Later it was also noted that many of these themes could be strung together to form narratives, much like the Stations of the Cross in Christian tradition (Castillo 1989; Quilter 1990, 1997). Scholars have attempted to dissect these themes and narratives to understand the social roles of the characters, and to clarify the sequential order of the scenes, so as to illustrate Moche ritual behavior.

One of the most famous Moche themes is the Sacrifice Ceremony, once called the Presentation Theme, and claimed to be part of a larger theme, the Warrior Narrative (Donnan 2010). The Warrior Narrative involves warrior combat and the parading of captive prisoners. It culminates with the Sacrifice Ceremony, which involves anthropomorphized objects and animals slitting the throats of the prisoner and filling up goblets with their blood (Donnan 2010; Donnan and McClelland 1999). The blood is then given to two mythical beings (Figures C (a female) and B) to be presented to two presumably higher deities (Figures A and D) (Figure 3.3).

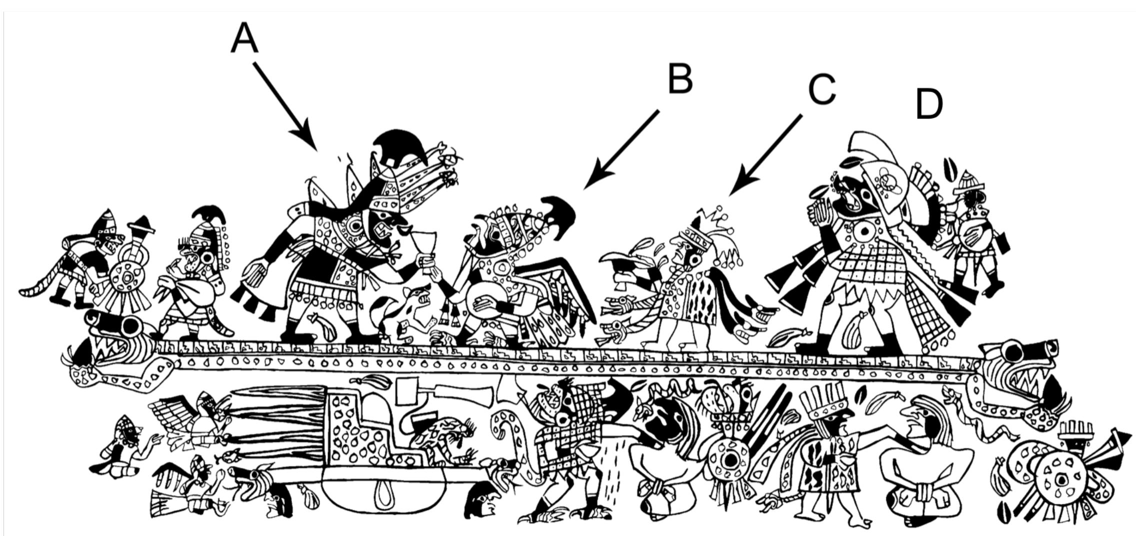


**Figure 3.3: Moche Sacrifice Ceremony indicating Figures A, B, C and D (after Donnan 2010:48).**

Sipán and the Sacrifice Ceremony

Despite all the research on the iconography throughout the 60s, 70s and 80s, it was not known that these images represented actual ceremonies that took place until the discovery of the burials at Sipán. In 1987, looters were discovered illicitly excavating graves at the site of Sipán in the Lambayeque Valley. Authorities notified archaeologist Walter Alva of these activities and a three-year salvage program was initiated that excavated three rich Moche tombs (Alva and Donnan 1993). The individual in the first of these tombs is now known as the Lord of Sipán buried with the accoutrements seen with Figure A from the Sacrifice Ceremony (Alva and Donnan 1993; Donnan 2010). The second royal tomb at Sipán contained the bird mask and goblet of Figure B from the Sacrifice Ceremony (Alva and Donnan 1993). Recently, Bourget (2008) has suggested that the man in tomb 3 was Figure D from this ceremony (Figure 3.3).

Excavations in 1991 and 1992 at San José de Moro uncovered two priestesses buried with the paraphernalia of Figure C of this ceremony (Castillo and Donnan 1994a; Castillo and Donnan 1994b). This included two copper plumes seen on the headdress of the figure and a goblet. It was later noted that the "Warrior-Priest" excavated by Strong and Evans (1952) from the Huaca de la Cruz may have also had a role in this ceremony.

These discoveries demonstrated that the Sacrifice Ceremony was not a mythical event, but rather, a real ritual only performed by individuals dressed in the regalia seen in the iconography (Donnan 2010). Furthermore, the discovery of multiple burials with these items demonstrated that Figures A, B, and C were not necessarily important individuals themselves, but rather were roles that were played by members of the society. Donnan (2010) proposes that these individuals could have been playing the roles of god-impersonators were perhaps instead akin to clergymen, such as priests, bishops or cardinals in the Catholic Church.

Donnan (2010) claims that the Sacrifice Ceremony was the crux of Moche ideology. It was a major part of the glue that held the Moche together as an archaeologically recognizable culture. The symbols from the Sacrifice Ceremony and the Warrior Narrative account for over 60% of all Moche art[4] (Donnan 2010:60) and are seen in some form over the geographical expanse of the north coast. These symbols are the marker of a Moche site. However, it is likely that the way in which this ceremony was performed varied from region to region and it did not go unchanged through time, since Moche lasted over 700 years. Even if religion and the Sacrifice Ceremony were the binding glue of Moche society, how the various settlements that participated in this religion were interconnected politically remains a major question. The religious aspect of Moche does not necessarily undermine the conquest state model, but the mechanism behind Moche expansion would need to be rethought. I address these political and religious links between settlements as manifest in ceramic style in my research at Licapa II.

**Moche Archaeology 1990s-Present**

The discovery at Sipán was important in other ways as well. Prior to 1987, excavation of huacas was not allowed because Peruvian authorities, and archaeologists alike, assumed everything was already looted. Moreover, they feared that if anything new was found, it would call attention to the riches of the huacas and attract more looters. It was not until Sipán that archaeologists realized that if they did not excavate at huaca

[4] Aside from the characters seen in the Warrior Narrative and the Sacrifice Ceremony, Donnan includes the symbols of the weapons bundle, eared serpent and Spider Decapitator into this count. He claims these symbols are similar to the Christian cross and represent the religion as a whole.

centers then everything would likely be lost to looting. This discovery initiated a new era in Moche archaeology beginning in the 1990s that continues today.

Paramount to this wave of research are a series of long-term projects at the larger huaca centers of El Brujo, Huacas de Moche and the cemetery site of San José de Moro. These projects and their findings have greatly shaped our understanding of Moche politics. Today we understand Moche in terms of the southern and northern realms mainly because of the work at these sites, but increasingly from other smaller and more short-term projects. Below I review the current understanding of the Southern and Northern Moche and how this developed out of research at the sites of Huacas de Moche, El Brujo, and San José de Moro. I will pay special attention to their architectural characteristics and ceramics so as to facilitate comparison to the findings at Licapa II. I also contextualize the Southern and Northern Moche by briefly reviewing other projects that have helped shape the current consensus on Moche political organization. I also review the ceramic styles that been found in each of the regions since ceramics remain the main resource archaeologist use to suggest political, social, ethnic, or religious associations between people residing at varying settlements.

<u>Southern Moche</u>

The Southern Moche region is defined as the area from south of the Pampa de Paiján starting from the Chicama Valley since this is where the majority of the classic Moche ceramics and architecture, as identified by Larco, are found. Licapa II is one of the northernmost sites in this region. The southern extent of the Southern Moche is still open to question with Moche materials having been found as far south as the Huarmey Valley (Makowski 2010). However, the site of Pañamarca in the Nepeña Valley is the southernmost monumental center with Moche art and architecture. Huacas de Moche and El Brujo are the two most prominent sites in these valleys.

*Huacas de Moche*

Ricardo Morales and Santiago Uceda have conducted steady research at the Huacas de Moche since 1991. They maintain that the Huacas de Moche was the capital of the southern Moche state and the locus from with Moche influence spread to other valleys. To date, the majority of their work has focused on the Huaca de la Luna, but there has also been work in the urban zone and more recently at the Huaca del Sol (Figure 3.4). The Huaca de la Luna is a complex composed of several units: Platform I, Platform II to the southeast of Platform I, and three plazas Plaza 1, Plaza 2 (2a, 2b), and Plaza 3 (3a, 3b, 3c), all of which are referred to as the Old Temple and oriented 31˚30 east of north (see Seoane 2011). Platform III, also called the New Temple, and Plaza 4 are located to northeast of the Old Temple and also part of the complex (Figure 3.5). Most of the work has focused on defining the construction phases, discovering the overall architectural layout of the Old Temple, and conserving the polychrome murals (Morales et al. 1998; Uceda et al. 2001, 2010, 1997, 2000, 2004, 2006, 2007, 2008; Uceda and Tufinio 2003). The Old Temple was built in five stages, or five buildings. The earliest four buildings are associated with Moche III ceramics and were built between 250-500 AD. The last and final remodeling of the huaca is associated with Moche IV ceramics.

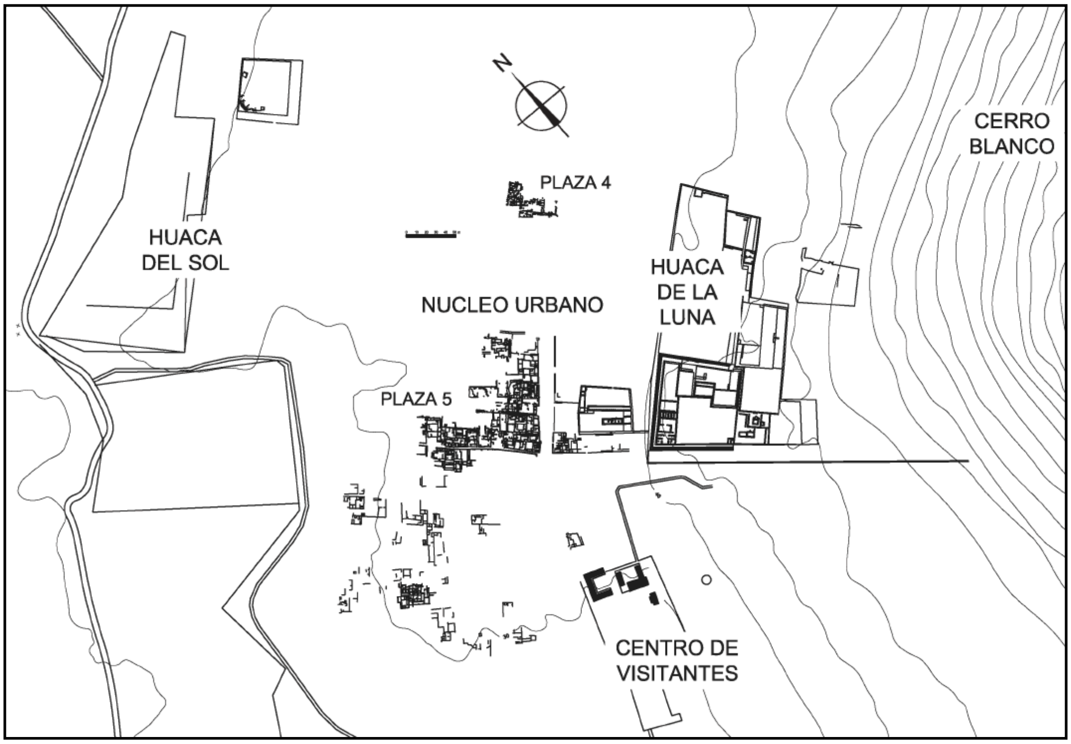


**Figure 3.4: Huacas de Moche site plan (Uceda 2010).**

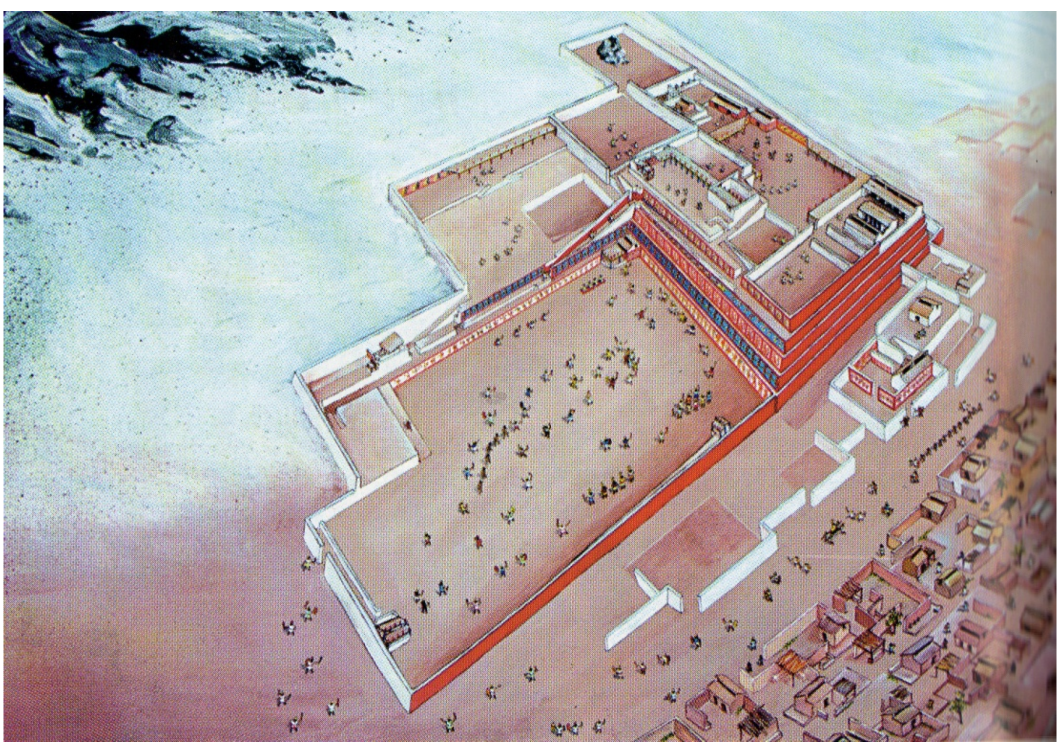

**Figure 3.5: Artistic rendering of Huaca de la Luna. The main structure if Platform I, Plazas 3a and 3c are in the background. Platform III is not shown here. (Image courtesy of Jeffrey Quilter)**

Uceda and Trufino (2003) suggest that each building at the Huaca de la Luna was likely interred corresponding to some event, such as the death of a ruler and the coronation of a new one. Many burials were found in the fill of each building, possibly as offerings to the temples themselves, the gods, or the deceased or new ruler. Objects and garments found in these burials, and other burials of religio-political elite, have been associated with ceremonies and rituals seen in the iconography (Uceda 2010).

All of the buildings have polychrome friezes displaying anthropomorphic beings and supernatural creatures. The front façade of the Huaca de la Luna during the last three phases was decorated with iconography related to the Warrior Narrative and sacrifice. The first of the seven steps was decorated with warriors leading naked prisoners presumably to their sacrifice, a scene also observed in the ceramic art and interpreted as the prelude to the Sacrifice Ceremony. Frontal facing holding hands figures mark the second terrace. The remaining terraces have anthropomorphic characters holding knives and severed human heads (Uceda 2010).

Investigations have also revealed many physical and architectural attributes that are portrayed in the art of the Warrior Narrative and Sacrifice Ceremony. This includes a dais at the highest point of Platform I, thought to be where the goblets were presented, and plaza 3a and 3c. These two plazas, which are located on the southeast side of the huaca abutting Cerro Blanco, were excavated by Steve Bourget (1998, 2001) and John Verano (Verano 2001, 2008) respectively (Tufinio 2004a, 2007). Both plazas contained superimposed layers of numerous sacrificed male victims between 15 and 35 years old. Some layers had remains caked in clay indicating that they were possibly associated with an El Niño event (Bourget 1998, 2001; Verano 2001, 2008). Even though no burials have been found of individuals dressed in the regalia of the Sacrifice Ceremony, this other evidence suggests that it played an important role in Moche religion.

Sometime between 550 and 600 AD the Huaca was abandoned and the focus switched from the Old Temple to the New Temple and the Huaca del Sol (Uceda 2010). The New Temple was constructed with different sized bricks than those of the Old Temple, all of which were marked (Uceda and Tufinio 2003). Also, the axis of the New Temple was shifted. The new orientation was east-west, whereas the Old Temple was oriented north-south. There was also a shift in the execution and design of the mural program between the two temples. The deities and supernatural beings depicted in the Old Temple were closely aligned to Cupisnique divinities, such as the Decapitator. Whereas the New Temples murals were more realistic and similar to the paintings on Moche fineline ceramics, especially from the Moche IV phase (Uceda 2010). The themes uncovered thus far in the New Temple are the Revolt of the Objects (Kroeber 1925; Quilter 1990), parading warriors, and a scene of female weavers (Uceda et al. 2011a). Because of the similarities in bricks between the New Temple and the Huaca del Sol, it has been proposed that at least the final phases of these two buildings were built and used at the same time. The Huaca del Sol did not receive much scientific attention until 2011, when an excavation program began there (Tufinio et al. 2012). Possible administrative structures have been uncovered on the top, as well as Moche IV ceramics.

After the abandonment of the Huaca de la Luna around A.D. 600, activity in the urban core increased. Picking up on T. Topic's work Claude Chapdelaine (2001, 2002, 2003), and others (Bernier 2008; Chapdelaine et al. 1997; Chapdelaine et al. 2001; Chapdelaine et al. 2004; Gamarra and Gayoso 2008; Prieto 2008; Rengifo and Rojas

2008; Tello 2008; Uceda and Armas 1998; van Gijseghem 2001), excavated in the urban zone to further understand its composition and layout. Research has exposed thirteen occupation levels and numerous construction blocks of varying sizes and statuses that include residential compounds with patios, storage facilities, specialized workshops, kitchens, and administrative sectors. Plazas, alleys, and avenues separated these construction blocks. There is more evidence for the later occupations associated with Moche IV ceramics, mostly because these levels need to be removed first to uncover earlier contexts. The early contexts were associated with Moche III ceramics. Very few solid examples of Moche II have been encountered at the site and all were associated with burials excavated in the 70s (Donnan and Mackey 1978).

Changes in the organization of the urban space occurred overtime and after the proposed abandonment of the Huaca de la Luna around 600 AD. Chapdelaine (2002) and Uceda (2010) claim that these changes, including increased restricted accesses to compounds and streets, and an increase in control over the production and distribution of goods, demonstrate that there was an increase in power of the urban class through time. Uceda (2010) claims that rituals were shifted from the temple of the Huaca de la Luna to the residences of lords and urban elite, which he infers from the increase of ritual objects in the urban context such as figurines, stirrup-spout bottles, and musical instruments. He suggests that this increase in power of the urban class marked the start of the secularization of power in the Moche world, which eventually culminated in Chimu times (Uceda 2010).

Recent radiocarbon dates have demonstrated that the Moche occupation in the urban core lasted until 800-850 AD even though the people continued to use Moche IV pottery (Chapdelaine et al. 2001; Uceda et al. 2001; Uceda, Chapdelaine et al. 2007). This discovery has caused the reevaluation of the validity of strict temporal phases of the Larco sequence (Lockard 2009). Prior to this time, it was believed that Moche IV ended around 500-550 AD and was succeeded by Moche V between 550 and 650 AD. This is why the CCMVP members thought that inhabitants of Huacas de Moche abandoned the area and moved to Galindo where they established a capital at Pampa Grande. We now know that Galindo and Huacas de Moche were occupied simultaneously, yet they were using different fine Moche wares. Now the relationship between these two centers and Pampa Grande has become a question that begs more research. I will address this in more detail below.

Moreover, there is no good evidence to suggest that Huacas de Moche was ever completely abandoned. In the later Moche levels Wari pottery is found in numbers, and their presence may have been a contributing factor to the gradual changes that took place. After the Moche's demise, there is evidence for continued use of the site by Chimu people, but not to the same extent as during Moche times. Research at the Huacas de Moche continues today and will undoubtedly continue to contribute to our understanding of Moche.

*Chronology and Politics at the Huacas de Moche*

Uceda (2010) proposes that the Huacas de Moche was the most powerful and influential Moche site on the north coast. It is believed that there were two phases at this site. Uceda (2010) claims that pre-600 AD the Huaca de la Luna was the seat of a theocracy where social and political relationships were defined by the activities at temple of the Huaca de la Luna and a class of priests that performed rituals of human sacrifice there. Post-600 AD there was a change in the political landscape at the Huacas de Moche and elsewhere that lasted until 850-900 AD. Power shifted from the Old Temple to the other parts of the site, which include the Huaca del Sol, the New Temple and the urban core. This has been interpreted as the increase in secularization and weakening of the power of religious power of Moche society that ultimately culminated with the emergence of the Chimu archaeological culture.

Uceda claims that this reordering was the beginning of the gradual collapse of the Southern Moche State. Uceda (2010:157) states that this collapse was "part of a long process of internal and external contradictions that provoked the loss of control of the territories and changes in the social structure of the Moche urban elite." The problem with this interpretation is that it assumes that the Huaca de la Luna had political control over territories without questioning the nature of the control. My review of radiocarbon dates from seventeen Moche sites in Chapter 8 suggests that Moche influence was much greater after 600 AD than it was prior to this time in both the south and the north, indicating that the shift in organization at Huaca de Moche may in fact reflect changes in the political landscape that are much more complex. The complexity of these relationships will be explored from prospective of Licapa II in the following chapters.

*El Brujo*

Research at El Brujo began in 1990 under the sponsorship of the Fundación Augusto N. Wiese and led by archaeologists Régulo Franco, Cesar Galvez, and Segundo Vásquez (Franco et al. 1994, 1996, 1998a, 1998b, 1999a, 1999b, 2001a, 2001b, 2001c, 2003, 2005, 2010). Work here has for the most part been in accordance with the southern state model espoused by the CCMVP and the Huacas de Moche project. The work over the last 22 years has focused primarily on the Huaca Cao Viejo (also called just Huaca Cao), which is the largest Moche structure on the El Brujo terrace. However, other Moche components of the terrace have also been investigated, such as the ceremonial wells (Quilter et al. 2012), three *montículos,* or mounds, and residential areas known as Las Tinajas in the Paredones sector of the site (Mujica 2007). Unfortunately not much has been published on the residential areas and the majority of what we know comes from the Huaca Cao itself. Furthermore, no research has been performed on the Huaca Cortada, the other Moche huaca and presumed dual partner to the Huaca Cao, to explore how it related to the Huaca Cao or the rest of the structures on the Brujo terrace (Figure 3.6).

The Huaca Cao is a stepped platform structure. It consists of four superimposed buildings with evidence for three other remodels (Figure 3.7). Franco et al. (2010) suggest that the multiple building interments were factors of the repairs made from the damage caused by earthquakes and El Niños, since there is evidence for these in all of the structures. They interpret the presence of sacrifices and offerings in the fill as a way to appease the gods after the catastrophic events. This is a slightly different interpretation than that given by Uceda (2010) who suggests that multiple superimposed buildings corresponded with closing and opening rituals possibly related to events such as natural disasters or changes in political rulers.

Construction on the Huaca Cao likely began around 300 AD. The front terraces from the earliest phases, Huaca 1 and 2, of the Huaca Cao were painted in solid red, white, and yellow. Internal spaces of the Ceremonial Patio on the top of Huaca 1 had diagonal panels of stylized geometric stingrays. The Ceremonial Patio of Huaca 2 has iconography of the Decapitator with severed human heads in his hands and what is referred to as the Maritime Frieze. This contains diagonal panels of stingrays as well as catfish and waves in bas-relief (Franco et al. 2003).

In 2004, archaeologists found an elaborately decorated patio on the northwest corner of the platform, which is associated with the second building. Below this patio, and associated with the fill of the first building was the burial of the Señora de Cao. She was a high-status tattooed female adorned with elaborate metal nosepieces, necklaces, atalatals, and headdresses and embroidered textiles. She was buried while the second building was under construction (Mujica 2007). In her tomb four Castillo ware "Gallinazo" ceramics and seven Moche I/II ceramics were found (Mujica 2007:225). She was accompanied by the burial of three other individuals each in separate nearby tombs. These individuals were also buried with exquisite items such as metal plated leather pectoral, feathered headdress, embroidered textiles, and Salinar and Moche I/II style vessels. A range of radiocarbon dates from the tomb of the Señora and her accompanists were from between 430-640 AD. Although the range of dates is quite long, even the earliest dates are late for the early ceramic styles found with the tomb. This will be discussed more in Chapter 8. The role of the Señora de Cao has not been definitively identified in Moche art.

The third building of the Huaca Cao was constructed in multiple phases and is significantly deteriorated. The front façade is fragmented but contains four steps with polychrome friezes. The first is painted white. The second shows human figures holding hands and facing the large plaza to the north. The third shows a repeating scene of sacrifice where a large character is holding a knife in one hand and grabbing the hair of a smaller character in his other hand. The fourth step is very fragmented and shows a stylized catfish motif similar to that seen in building 2 (Franco et al. 2003). Huacas 1-3 are associated with Moche I/II and III ceramics and hybrids of these styles. It appears as though Huaca 3 stood abandoned for a time before the final Huaca 4 was constructed (Quilter et al. 2012). Sand had begun to accumulate over Huaca 3, indicating that the site may not have been in use for some period of time prior to the construction of Huaca 4 and the reoccupation of the site with people using Moche IV ceramics.

Although there were similarities in the form of all the Huaca Cao buildings, the last structure was a departure from the previous stylistic regimes and a complete copy of the architectural and mural program seen at the final phase of the Huaca de la Luna. Moche IV ceramics were introduced at the site during the same period. There was also evidence for disinterring individuals from the earlier buildings and placing Moche IV burials in their place, possibly indicating a regime or ideological change that conformed more to what was happening at the Huaca de la Luna.

This final building of the Huaca Cao is considerably deteriorated, but Franco et al. (2003:169-192) and Mujuca (2007:249) suggest that it was abandonded around 650 AD. Rain from a strong El Niño event around the time of abandonment heavily damaged the last façade (Mujica 2007:249). However, there are no radiocarbon dates associated with the abandonment or the event. The year 650 AD is largely based on the associated Moche IV style, but we now know Moche IV continued to be used until at least 800 AD at other sites, such as the Huacas de Moche.

Although Moche IV ceramics continued to be used at the huaca itself until the abandonment, some Moche V ceramics are found in other sectors of the site. They are mostly found in burials on the west side of the ceremonial plaza and around the ceremonial wells (Mujica 2007; Quilter et al. 2012). They are also present in the Las Tinajas residential sector in non-funerary contexts. Mujica (2007) interprets this as a reoccupation of the El Brujo terrace after the abandonment of the Huaca Cao. However, since we now know that the Moche IV and V styles were used concurrently, and there are no radiocarbon dates from this sector, their presence could indicate a more complex scenario. Moche V ceramics were also found in the in other areas of the Paredones residential sector, but this information has yet to be published (Cesar Galvez, personal communication 2011).

At some point after the El Niño event that damaged the last façade the Huaca Cao was deliberately covered in rubble. Lambayeque period burials dating to 900-1000 AD are found in this fill. However, we do not know exactly how long the huaca stood exposed before the interment, or any other details as to how or why this occurred. Like Huacas de Moche, there was continued occupation at the site after the Moche abandonment. This continued through colonial times (Mujica 2007:289-309).


**Figure 3.6: El Brujo Terrace showing major architecture (image courtesy of Jeffrey Quilter).**

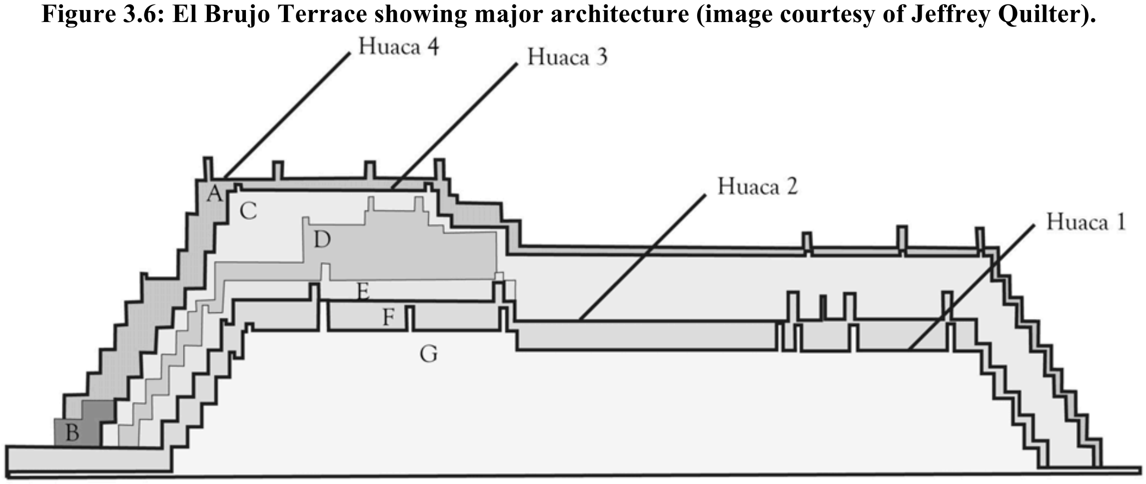


**Figure 3.7: Huaca Cao Viejo construction phases (after Quilter et al. 2012).**

*Chronology and Politics at El Brujo and Huacas de Moche*

Like Huacas de Moche, there are also two clear construction phases at El Brujo. Unfortunately, however, since the majority of the excavations have focused on the Huaca Cao, we do not know how these changes affected the whole site or if there were additional phases after the abandonment of Huaca Cao. Examining the construction phases at the Huaca Cao shows that there was a hiatus in the activities performed at the site after the construction and use of Huaca 3. Prior to this hiatus, material remains and mural programs are recognized as Moche. These are quite distinct from those seen at the Huaca de la Luna from the same time period. Moche I and II ceramics and mural programs of geometric designs and stylized stingrays and catfish characterize Huaca Cao during this early phase. Moche I and II are absent from the Huacas de Moche indicating that this may be a local El Brujo style and that there was not a great deal of affiliation between Huacas de Moche and El Brujo at the time.

Sometime during the latter part of the sixth century or early seventh century, the earlier Huaca Cao program was discontinued. After a period of time, marked by the accumulation of sand on the façade of Huaca 3, Huaca 4 was constructed. Radiocarbon dates confirm that this occurred sometime between 550-670 AD (Quilter et al. 2012). With this revival in the architectural program at the site, the religious symbolism was dramatically changed to reflect the same imagery as the final three phases of the Huaca de la Luna, indicating that this program originated there (Quilter et al. 2012). Moche IV ceramics were also adopted at this time at Huaca Cao. Moche IV ceramics were also adopted at the Huaca de la Luna during the last and final phase. This indicates that a new expression of religious ideology had recently taken hold at this site as well. However, at the Huaca de la Luna the artistic development of the murals and ceramics from the earlier to the later phases was a more gradual process. The new program adopted at the Huaca Cao Viejo was a major reorganization from earlier times, which suggests a major political shift. We also see major changes occur around this same time at other Moche sites, such as Licapa II, as will be discussed in the following chapters.

It is curious that it is right when the activities at the Huaca de la Luna cease that the artistic program is adopted at Huaca Cao. Currently, it is thought that Huaca Cao was abandoned by AD 650 (Mujica 2007), suggesting very short-lived affiliations between the two sites. Unfortunately, the major and abrupt changes in the Moche world around A.D. 600 cannot be clarified with the imprecision of radiocarbon dating at this time. In the future more investigations at the Huaca Cortada and the area between the huacas at El Brujo, as well as a rigorous program of radiocarbon dating at both sites will hopefully help to clarify the complex relationship between these two major sites.

I will return to our current understanding of the political dynamics of the southern Moche outside the large centers after I review the reasons why we now consider this region separate from the northern Moche realm.

<u>Northern Moche</u>

The northern Moche realm extends from just north of the Pampa de Paiján. It begins in the Jequetepeque Valley –the most studied northern valley –and extends to Piura (see Figure 1.1). This region contains many of the well-known and important Moche sites including San José de Moro, Pampa Grande, Dos Cabezas and Sipán.

*San José de Moro*

Soon after the discovery at Sipán, Christopher Donnan and Luis Jamie Castillo began excavations at the site of San José de Moro in the northern Jequetepeque Valley (Castillo and Donnan 1994a, 1994b; Donnan and Castillo 1994). San José de Moro is very different from the other sites mentioned thus far in that it is mainly a cemetery. Researchers working here and at other sites in the Jequetepeque were the first to question the idea of the Moche state based on differences identified in the material culture between this site and the sites to the south of the Pampa de Paiján (Castillo and Donnan 1994a, 1994b; Donnan and Castillo 1994). These differences will be elaborated on below.

As mentioned, the first excavations in 1991 encountered the burials of two priestesses identified as Figure C in the Sacrifice Ceremony and thus identified San José de Moro as an important Moche site. The excavations continue at the site today under the direction of Luis Jaime Castillo with the expressed goals of understanding the vertical stratigraphy and funerary rituals of the Moche with specific attention to the end of the Moche period. Over the years they have determined that the site represents over 1,000 years of continuous use, which is demonstrated by changing ceramic styles and different kinds of tomb architecture. Significantly, Castillo and Donnan (1994a) noted that the Moche ceramic styles do not conform to the Larco sequence and that something completely different was going on here and in the northern valleys in general. They refer to the northern Moche sequence in terms of Early, Middle and Late Moche. These phases correspond to different ceramic styles seen in the northern valleys (see Figure 1.2).

Occupation at SJM began during the Middle Moche Period. This phase corresponds to Moche III and IV ceramics in the southern valleys, yet it is a distinct phenomenon and not a variant of Moche III. Moche III is characterized by fine ceramics painted with realistic imagery in finelines, whereas Middle Moche ceramics are of a much lower quality (Castillo 2001). The most decorative designs were figures painted in thick lines on the bodies of the vessels. Middle Moche potters also used a purple slip for decoration, not seen elsewhere. Despite the elaborate gold found at Sipán, no fine pictorial ceramics were discovered. Instead, the assemblage was dominated by crudely decorated Middle Moche ceramic.

The Late Moche period at San José de Moro is characterized by the sudden appearance of fineline ceramics. The fineline ceramic style found here, however, is quite different from that found in the valleys south of the Pampa de Paiján where there was a long tradition of development from Moche I-V. Late Moche finelines, like Moche V, have tapered spouts. However, there are noticeable changes from the Moche V vessels found in the Chicama Valley. Late Moche stirrup-spout vessels have a variety of different forms not seen in Moche V. Larco originally identified them as Moche V, but we now know they were a distinct style. Many of the Late Moche vessels have curved equators dividing the chamber into two halves and ring bases. Most Moche V bottles are ovoid in shape and have flat bases. Other Late Moche vessels have elaborate enclosed inner chambers with perforations or holes on the outer decorated chamber. Late Moche stirrups can be quite elaborate and contain modeled figures, such as monkeys, bicephalic snakes, and other ornate designs (McClelland et al. 2007). There are also changes in the decoration. The figures look more like caricatures in Late Moche in contrast to the realistic features of Moche IV and V fineline (McClelland et al. 2007). They are also recognizable by their densely packed scenes with abstract swirls and dots in the background and a reduction in themes, with females and marine motifs being the most prevalent. The Late Moche fineline tradition is concentrated around the site of San José de Moro, where the majority of the vessels have been found. Examples of this style have been noted south of the Pampa de Paiján, but tend to be rare. For example, one vessel was found at El Brujo, and none have been found at the Huacas de Moche. I have found at least a dozen examples of this style at Licapa II, which will be discussed in Chapter 6.

This Late Moche style does not have antecedents in the Jequetepeque Valley or with the Middle Moche tradition. Luis Jamie Castillo (2009) suggests that potters possibly migrated from Moche V workshops in the Chicama to the Jequetepeque. The migration itself, as well as influences from the highlands, such as Wari and Cajamarca, caused changes and adaptations to produce the Late Moche style. The influence from the highlands is also seen in Moche Polychrome, which became prevalent at San José de Moro around the same time as Late Moche fineline.

The stylistic differences first noted by Donnan and Castillo have greatly changed the way that we understand Moche. Based on their work it became apparent that the Larco sequence did not work in valleys north of the Pampa de Paiján. There were two regions of Moche development that did not follow the exact same artistic or organizational trajectory.

Aside from revolutionizing our understanding of the ceramic sequence, work at SJM has been invaluable in understanding Moche funerary rituals and political organization. Rituals surrounding the burials took place at the cemetery. Rows of large *paicas,* or storage vessels, indicate that the preparation, storage, and consumption of *chicha* (corn beer) were part of the ceremonial activities that accompanied burying the dead.

Boot-shaped and simple pit tombs were used in both the Middle and Late Moche periods. By Late Moche, the most elite were buried in chamber tombs and accompanied by ornate ceramics, beads and shells. Not as much gold is present in these tombs as compared to the earlier ones, such as at Sipán. However, from the grave assemblages we can tell a lot about the lives of the individuals. For example, besides the Priestesses, of which seven have been found, tombs of a presumed weaver and chicha brewer have also been located (Castillo 2011).

Castillo (2010) has suggested that people from the various settlements throughout the Jequetepeque Valley would bring their important dead to SJM. Many of the burials show signs that they were moved or carried, potentially over a distance, while the body was already in a state of decay. Jumbled bones inside the coffins attest to this. In some cases a great deal of time passed before the dead arrived at their final resting place at SJM, which was possibly related to certain times of year when the festivals could take place. San José de Moro served to unite people from disparate areas for this important funerary ritual event, rife with chicha and food. These events would be a way for the living to forge new relationships and strengthen bonds with people from other settlements and negotiate political matters. Therefore, the ceremonies were for both the living and the dead and helped define the Northern Moche political landscape.

*Northern Moche Politics*

In addition to research at San José de Moro, other recent work has increased our understanding of northern Moche politics in the Jequetepeque Valley. Edward Swenson's (2003, 2004, 2006, 2007, 2011a, 2011b), dissertation and subsequent work focused on identifying, mapping and excavating Late Moche sites throughout the Jequetepeque Valley. Luis Jamie Castillo (2010) has also explored many of these hinterland sites including Cerro Chepen (Rosas 2010), San Ildefonso, Santa Catalina, and Portachuelo de Charcape (Johnson 2008) to understand their relation to San José de Moro. These hinterland researchers also set out to understand the development and functioning of the irrigation system in this valley (Castillo 2010; Eling 1987). All this research has taken the Northern vs. Southern Moche model first developed by Castillo and Donnan (1994a) based on ceramic styles a step farther. It is now suggested that the northern Moche region was composed of a series of independent polities distinct from one another and from the southern Moche region (Castillo and Uceda 2008). These independent polities participated in their own rituals using specific architecture in many ways unique to their own sites. This research from the hinterlands has shown a similar pattern that was deduced from the site of SJM in that inter-valley political interactions occurred over funerary rituals at SJM and served to maintain the political landscape, at least in the Jequetepeque Valley in Late Moche times.

The situation was likely different at other settlements in the north from earlier time periods, such as Dos Cabezas, Sipán, or Ucupe, and even sites that were contemporary with San José de Moro, such as Pampa Grande but were using different material culture and located in different valleys. Below I examine how Moche ceramic styles have shaped our view of Moche politics and our current understanding of the Moche political landscape.

## Moche Politics: Ceramic and Architectural Styles

Much of our understanding of Moche politics comes from ceramic style and to a lesser degree architectural style. Kroeber first noticed differences between architectural techniques in the north and south, as was discussed above. However, these differences and similarities in Moche architectural styles between valleys and regions remain understudied. This is in part because architecture is highly variable throughout the Moche world and typologies have not been fully developed for all the different variations and types of settlements (see Shimada 1994). It is also because huacas are big and take many years, and lots of funding to excavate and fully understand. Furthermore, huacas have only been excavated since the 1990s. The only two sites where published research indicates that the architecture appears to be the same, or in the least very similar, are the last phase of Huaca de la Luna and Huaca Cao Viejo. These are the sites with the longest running excavation programs, as I discussed above. There is also new evidence to suggest that Dos Cabezas and Ucupe were also quite similar (Bourget 2011), but this has not been fully published as of yet. Although data from Moche architecture are much more limited, I discuss it in the context of Licapa II in Chapter 7.

Ceramics, on the other hand, have played a much larger role in defining Moche politics. From the time of Larco we have tracked Moche influence or "expansion" based on the appearance of the different ceramic phases in the different valleys. Although this approach is fraught with problems, that is to say pots are not people or politics. In recent years critical assessment of ceramic styles and their dated archaeological contexts have led and continue to lead us to a better understanding of political or religious affiliations between sites.

Southern Moche Ceramics and Politics

In general, the majority of research south of the Pampa de Paiján in the last two decades has not been designed to challenge the state model or to explicitly understand how settlements of varying sizes interacted with one another. Much of this is because the majority of the investigations have focused on the two largest and most influential centers, as described above. The Larco sequence was assumed to work and track expansion. In many cases difference in ceramic style were overlooked for the similarities. For example, Donnan (1973) noted that Moche IV ceramics in the Santa Valley shows variations from the Moche IV style in the Moche Valley. These include the almost total lack of black wares, very few fineline ceramics, and ceramics with a much cruder surface finish (Donnan 1973:103). Chapdelaine (2008), however, overlooks these differences and claims that we do not have enough data to demonstrate that the Santa leaders had enough autonomy to be independent, or to "withdraw," from the Moche state. I question the fact that there is enough information to claim that they were ever part of a conquest state and that the stylistic variation is a result more of religious influence rather than control.

Recent research in Virú has also opened up the debate on the expansive state paradigm that was built on ceramic style. For example, research by Millaire (2010) and Bourget (2010) has shown that sites that were once considered definitively Moche may actually be local variants or not Moche at all[5]. This complicates our understanding of the

[5] Recently, Steve Bourget (2010) has concluded from investigations at Huancaco that Huancaco should be considered a local cultural variation and ceramic style. It may have been influenced by Moche styles of the

Moche political landscape. Also, research at Galindo and Cerro Mayal has helped clarify the relationship and timing of Moche IV and V ceramics. This has nuanced our understanding of political relationships over time and refined the idea that the Larco sequence tracks style and not necessarily time.

As mentioned earlier, it was once thought that the site of Galindo in the Moche Valley was occupied after the abandoning of the site of Huacas de Moche. This was hypothesized based on the presence of only Moche V sherds at this site. This hypothesis began to fall apart after dates from the Huacas de Moche showed that the site was not abandoned around A.D. 600, as was previously thought (Moseley and Day 1982), but in fact continued to be occupied well into the ninth century (Chapdelaine 2001; Uceda et al. 2001; Uceda et al. 2007). Lockard (2009) has recently shown that the dates from the Moche occupations at Galindo and Huacas de Moche completely overlap, although Galindo was not inhabited until at least A.D. 700. The fact that these two sites in the same valley were using completely different material culture indicates that the relationship between them was likely complex.

Further complicating the picture of Moche IV and V is the site of Cerro Mayal, investigated by Glenn Russell, Jesus Briceño, Banks Leonard and Margaret Jackson between 1989 and 1999. Cerro Mayal was a ceramic workshop in the center of the Chicama Valley that produced Moche IV mid-grade to fine wares (Jackson 2000; Russell and Jackson 2001; Russell et al. 1998). Notably, no fineline ceramics were found in the

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time, but he contends that the ceramics and architecture do not carry the Moche religious message, and therefore, cannot be considered truly Moche. This greatly complicates our understanding of what is Moche and what is not, mainly because there has never been an agreed upon definition. One or two pots by themselves may be considered Moche, but it is the collection of pots, or architecture, that together appear non-Moche. Likewise, in Millaire's (2010) recent reevaluation of the Huaca Santa Clara he suggests that there is very little, if any true Moche architecture or ceramics at the site. Some of the ceramics have Moche-like characteristics, but he contends that they are local phenomena.

investigations. Dates from this site mostly fall between 550-900 AD and show that Moche IV ceramics were produced until the end of the Moche era. The dates from the Moche IV ceramic workshop and those from Galindo clearly indicated that Moche IV and V ceramics were being produced and used at the same time. This implies that the relationship between these two styles was not chronological and suggests that other political or ideological factors were at work. However, until my excavations at Licapa II, Moche IV and V ceramics were never found stratigraphically together at the same site. I will further explore the relationship between these ceramic styles throughout this dissertation.

Northern Moche Ceramics and Politics

As was discussed, ceramics played a major role in defining the northern and southern Moche regions. A closer look at different ceramic styles from different sites can help further define political and religious affiliations beyond just defining the northern and southern regions. A critical assessment of ceramic styles in the southern Jequetepeque Valley shows that politics were likely much more complex than previously thought and that there was a level of interaction between the northern and southern regions. My research at Licapa II will further contribute to this picture.

At Dos Cabezas on the coast in the southern Jequetepeque Valley, Donnan (2007) excavated a series of looted and intact tombs from two phases of use of the site that date between 350-600 AD. Although from two different time periods, all of the burials had Early Moche ceramics, which are very similar, if not the same style as Moche I and II from the Larco sequence. However, since they are found in the north, they are referred to as Early Moche and not by the phase number. These ceramics are sculpted vessels with thick-lipped spouts. Some of these vessels, as well as nosepieces, and *porras*, or war clubs, are identical to those found with the Señora de Cao at El Brujo. This suggests relationships between these two sites. Moseley et al. (2008) suggest that dune encroachment and a large El Niño event around 600 AD caused the abandonment of Dos Cabezas and the movement of the population elsewhere in the valley. Donnan and Cock (1997) propose that some of them moved across the valley to Pacatnamú, where the Moche occupation dates to the period after Dos Cabezas' abandonment.

At Pacatnamú, both (Ubbelohde-Doering 1983) and Donnan and Cock (1997) excavated cemeteries of Middle Moche and Late Moche contexts. The Middle Moche graves show striking resemblance to the Middle Moche materials found at San José de Moro and Sipán. In the Late Moche burials, however, Moche IV and Moche V ceramics were found. They also noted fineline sherds in non-burial contexts and suggested that they had other uses outside of purely funerary contexts (McClelland 1997). Pacatnamú is one of the few northern sites with Moche IV and V ceramics in any quantity. It is possible that if the people from Dos Cabezas were associated with El Brujo, then the relationships with the south could have continued when they moved to Pacatnamú and this continuing interaction would explain why southern Moche ceramics are found there. However, the political dimension of Pacatnamú in the Moche era has not been fully addressed.

Edward Swenson and John Warner (2012) recently started a project at Huaca Colorada also located in the southern Jequetepeque Valley but farther inland from the coast. Aside from Pacatnamú, Huaca Colorada is one of the few sites in the Jequetepeque that has figurative and geometric Moche V fineline ceramics. No Late Moche San José de Moro style finelines have been recovered. However, domestic and mid-grade assemblages are very similar to those found at San José de Moro and other northern sites. Swenson and Warner (2012) also conducted a survey south of Huaca Colorada and into the Pampa de Paiján and found a high number of similar Moche V vessels. They, like Castillo (2009), suggest that the people from the Chicama Valley were traveling to the north through the Pampa de Paiján and bringing their vessels and ideas about vessel imagery and construction with them. It is possible that these people eventually reached Pampa Grande and brought the Moche V style there. It is also possible that the Moche V style reached this site through other mechanisms, such as diffusion or emulation.

Ilana Johnson (2010) notes that Pampa Grande has Geometric Moche V ceramics in a domestic context. These ceramics are identical to those found at Galindo. She also notes that very few figurative ceramics were found at the site and they were more similar to the San José de Moro Late Moche style than the southern Moche style. This is due to the prevalence of female and marine themes. However, the painting quality and line execution appears to be more similar to Moche V figurative painting than Late Moche fineline painting.

This recent research has complicated our understanding of Moche politics, especially the relationships that existed across the Pampa de Paiján and in the Late Moche/ Moche V period. My research at Licapa II adds to this new research and enhances our understanding of Moche political relationships between these two regions and for the southern Moche in general.

## Present State of Moche Studies

Above I have attempted to highlight major projects and major finding in the history of Moche studies, especially in regards to the ceramic sequence and chronology. We can now examine where this leaves us today. Larco's original interpretations and five-phase ceramic sequence continue to remain influential. However, research since the 1990s has challenged the single-state model (Bawden 1996; Castillo 2001; Castillo and Donnan 1994a; Castillo and Uceda 2008; Chapdelaine 2001; Lockard 2005, 2009; Quilter 2002; Shimada 1994; Swenson 2004, 2007). This research has helped to better define the northern and southern Moche realms and refined the notion of the Northern Moche (Castillo and Donnan 1994a; Castillo 2001, 2010; Shimada 1994; Swenson 2004, 2007, 2011a, 2011b). It is now claimed that the Jequetepeque Valley was composed of a series of independent polities that, although distinct politically, incorporated similar ceremonial and ritual practices. This is supported by architectural and ceramic data. Investigations at sites such as San José de Moro have demonstrated that Larco's five-phase ceramic sequence does not work well for the northern valleys. As a result, scholars have instead adopted a revised three-stage (Early, Middle, Late) ceramic chronological sequence (Castillo 2001).

Research on the Southern Moche has not reached the level of nuance that we have for the north. This region is still in many ways viewed as a monolithic conquest polity, even when data do not necessarily support the argument. This theory is based primarily upon evidence from large huaca centers in the heartland, and large satellite Moche settlements like Guadalupito in the Santa Valley (Chapdelaine 2010; Mujica 2007; Uceda 2010). More recent work is starting to break down this monolithic view and move away from assuming Moche ceramic styles are the sole indicators of ethnic groups, political units, or conquest (Millaire 2010). Recent research, including what I present in the following chapters, is also beginning to show that what was once thought to be a monolithic Moche style is actually a series of sub-styles or regional styles related to a shared political-religious ideology (Benson 2003; Donnan 2011). Exploring how people using these varieties of ceramic styles interacted and distributed themselves across the landscape is the next crucial step.

The majority of the sites I review above are among the largest in their respective valley. Prior to my research no intensive programs have been undertaken to explicitly understand the role of smaller ceremonial centers. The relationship between the northern region and the southern region also is underexplored. My contribution to the field is through examining the material culture, activity patterns, and built environment from one of these smaller centers in the northernmost section of the southern Moche realm, Licapa II.

# CHAPTER 4

## FIELD INVESTIGATIONS AT LICAPA II

In this chapter I describe the fieldwork I conducted at Licapa II in 2010. As previously mentioned, Licapa II is located in the northern middle Chicama Valley on the southeast skirt of Cerro Azul (Figure 1.5). The site consists of two huacas, at least two smaller buildings referred to as *montículos,* residential areas, a cemetery, a possible storage facility, and a canal as identified in my preliminary study. I choose to work at this site for a variety of reasons. First, no investigations have been performed at medium or smaller Moche ceremonial centers with the expressed interest of understanding their role in the settlement system. Since Licapa II is located in the so-called "heartland" of the Moche realm, it seemed especially valuable to investigate such a center in this location. Second, because Licapa II is a dual huaca center, it is comparable to the large centers of Huacas de Moche and El Brujo. Third, while doing preliminary surface reconnaissance in 2008 and 2009 I noted Moche IV, Geometric Moche V, and Late Moche ceramic sherds on the surface. As noted, Moche IV and Moche V ceramics are characteristic of the southern Moche region and Late Moche ceramics of the northern region. These three styles had not been found together in any great quantity at any other Moche site. I, therefore, hypothesized that by investigating Licapa II I could learn more about the interactions that occurred between the northern and southern Moche realms and the relationship of Moche IV to Moche V. Finally, no Moche V site had been investigated in the Chicama Valley even though Larco found Moche V ceramics there.

His collection of Moche V is primarily from the northern part of the valley from around the same branch of the canal where Licapa II is located. Therefore, by investigating Licapa II I could attempt to better understand the development of Moche V in the Chicama Valley.

Field research at Licapa II was designed to address these issues. I focused on two primary types of data: the architectural patterning of the site and the nature of artificial remains, mainly ceramics from both disturbed and undisturbed contexts. Additionally, 26 samples of organic material were taken for radiocarbon analysis to contextualize the ceramics and architecture at the site and to chronologically compare Licapa II to other Moche sites. I found that based on the architectural patterns, ceramic styles, and radiocarbon dates that Huaca A dates to an earlier time period than Huaca B and the area between the huacas. These data also indicate that a major organizational change occurred at the site sometime around A.D. 600-650, when Moche IV and V ceramics were adopted. This change is also seen at other sites in the Moche world and will be detailed in the following chapters.

Field research at Licapa II took place between March and June of 2010 and consisted of creating a topographic map of all significant surface structures and features, performing a gridded surface collection of ceramics, undertaking magnetometry and ground-penetrating radar surveys and excavating in five locations across the site. In this chapter I will discuss the results of these investigations.

## Previous archaeological research in the Chicama Valley and at Licapa II

Previous Research in the Chicama Valley

Aside from Larco's (1938, 1945, 1948, 2001) pioneering research, which consisted mostly of documenting burials and their accompanying grave goods, the El Brujo project and the research at Cerro Mayal and Mocollope were the only formal excavations of Moche sites in the valley prior to my work. Banks Leonard and Glenn Russell (1992) conducted a settlement survey known as the Proyecto de Reconocimiento Arqueológico del Chicama (PRACH), which covered roughly half of the lower valley. In 2009, Russell and Leonard donated archival materials from the PRACH to Harvard University Peabody Museum. I was able to work with this collection to better understand the distribution of Moche sites in the valley.

PRACH lasted from 1989 to 1992. There is a formal report for the 1989 field season (Leonard and Russell 1992), but the work done after this was never completed. Therefore, some of the site forms are missing from the archive and the extent of the survey area after the 1989 field season was not delineated in any of the notes available at in the Peabody Museum collection. From what was available, I determined that Leonard and Russell identified 124 sites as having Moche components. Unfortunately, since some of the site forms for the larger sites were not available, known Moche sites within the survey area, such as El Brujo, Mocollope and Facalá were not included in my count. Of the 124 that were identified as Moche, an occupation phase was not specified for 115 of these, since this can be difficult to determine from only a surface collection. Of the remaining, they identified six as late Moche, three as early Moche, and no sites were identified as middle Moche (Figure 4.1).

Also included in this archive are 119 ceramic petrographic thin sections and extensive ceramic data from Cerro Mayal and 26 other Moche sites in the Chicama Valley. An analysis (Russell et al. 1998) of the petrographic thin sections indicated that ceramics produced at Cerro Mayal are quite homogenous and easily identifiable. I reexamined 19 of these samples as will be discussed in the following chapter.

# Chicama Valley, Peru

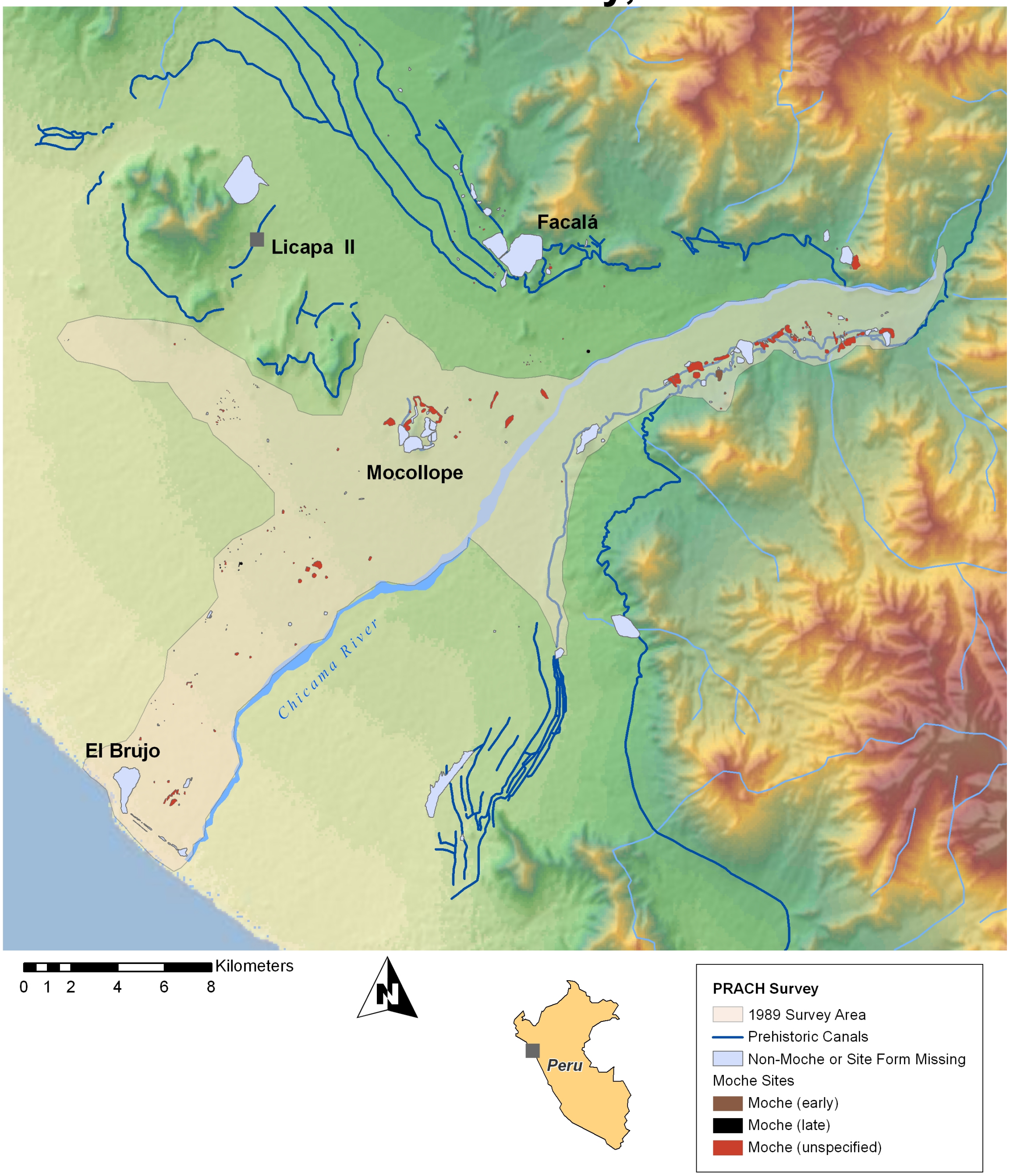


**Figure 4.1: Chicama Valley showing 1989 PRACH survey area, Moche sites identified, and ancient canals**

In addition to PRACH, a handful of other site inventories and surveys have been performed in the Chicama Valley (Chauchat et al. 1998; Gálvez and Briceño 2001; Gálvez and Becerra 2003; Gálvez et al. 2002; Krzanowski 2006; Ravines 1983; Reindel 1990, 1993; Toshihara 1998; Watson 1979; Yépez et al. 2007; Zaki 1973). All combined, a great deal of the Chicama Valley has been surveyed. However, there still are places in the valley that have not been thoroughly investigated. This includes the area around Cerro Azul, the mountain in the northern portion of the Chicama Valley where Licapa II is located.

Over the past six years I have visited over 40 Moche sites in the valley (including sites in areas not surveyed) and photographed surface artifacts to compare them to those found at Licapa II. My reconnaissance in the Chicama determined that Moche IV is the most abundant Moche ceramic style in the valley. I also found that Moche V materials are concentrated in the northern part of the valley. Furthermore, I noted that most Moche settlements in the valley consist of one or more huacas. These huacas range in size from small (less than 10 meters in diameter) to large, like the Huaca Cao Viejo (more than 120 meters in diameter and 30 meters tall). The investigation of Licapa II is the first in-depth study of a medium sized huaca center in this valley.

Previous work at Licapa II

Prior to my work, the site of Licapa II had never been the subject of formal investigation and excavation, although it has been mentioned by a handful of scholars (Galvez and Briceño 2001; Reindel 1990, 1993; (Ubbelohde-Doering 1958, 1959, 1960). In 1995, Belkys Gutierrez (1995, 1997) included the site in the research plan for her licenciate degree, but no fieldwork was ever conducted. However, she did manage to name the major monuments and take basic measurements. According to Gutierrez (1995, 1997), the monumental core of Licapa II measures roughly five hectares and consists of two huacas, which she called Montículo A and Montículo B. I have since changed the names to Huaca A and Huaca B, since the word “montículo” is used for much smaller structures than what we see at Licapa II.

Some confusion exists over the name and location of Licapa II that I clarify here. There are a number of sites all named “Licapa.” Licapa II is a separate site from Licapa I. In the literature there exists much uncertainty over what site is actually called Licapa I since two separate sites in different locations have been given the name. The first site known as Licapa I has polychrome murals documented by Bonavia (1974, 1985), and is located 6 km to the southwest of Licapa II in the agricultural fields near the modern town of Chuin Alto. This “Licapa 1” was registered by Reindel (1993) as site N˚49 in his evaluation of the valley. However, the 1983 Instituto Nacional de Cultura (INC) Inventorio Nacional de Monumentos Arqueológico lists the site of Licape 1 (site number 16, Chocope 16-e) as located to the northeast of Cerro Azul, and where the site more commonly known as Huaca de Mocan is situated.

There is also confusion over the site of Licapa II, the focus of this project. The site was registered as “Licapa II” by the INC and was assigned site number 17 on Hoja Chocope 16-e (Ravines 1983). However, Reindel (1993) recorded it as two separate sites, and called Huaca A “Licapa 2” site N˚50 and Huaca B “Licapa 3” site N˚51. To further add to the confusion, Galvez and Briceño (2001), and Franco et al. (2010) refer to Licapa II as the “Licapa Complex”, or just “Licapa.” Franco et al. (2010) discuss the site as just “Licapa” in the text, yet the map (Figure 1:111) labels the site as Licapa II and places it in more or less the correct location. They label another site as just “Licapa” and place it on top of Cerro Azul. No site I know of exists in this location and it seems to be a mistake.

As mentioned in Chapter 1, in 2009 through my collaborative efforts, the Peruvian INC delineated an arbitrary area of 6.5 $km^2$ around the site to be placed on the national register of archaeological sites. The monumental core of Licapa II is only approximately 5 hectares and located inside this larger polygon (see Figure 1.5). Below I describe the fieldwork conducted in 2010 at Licapa II.

## Surface Collection and Ceramic Patterning

As mentioned, I noted Moche IV, Moche V, and Late Moche ceramics on the surface when I visited the site between 2007 and 2009. Although excavations helped to clarify the vertical relationships between these ceramic styles, I decided to conduct a surface collection of the area around the monumental core of the site to understand the distribution of these ceramic types, as well as other ceramics (i.e. domestic wares, instruments) not noted in my preliminary observations. The strategy was designed so that I could understand if the type, style, and form of ceramics were scattered in any spatially significant pattern, potentially indicating use patterns and functions of different sectors of the site. Only diagnostic ceramic were collected. Diagnostic sherds were defined as all decorated wares, which include painted, molded and modeled sherds, and all utilitarian rims and bases.

I also wanted to determine the extent of the site in general. This proved to be very difficult since the desert plain around Cerro Azul is littered with ceramic debris. However, there was a significant drop off in the density of ceramics (1-2 sherd per .5 ha.)

and this is how I determined the boundaries of my surface collection. Also, no other diagnostic Moche ceramics (decorated wares) were found immediately outside (within .5 ha.) of the boundary of the surface survey area and only a few domestic wares were noted. Since domestic wares do not change much over time (Donnan 1973; Gamarra and Gayoso 2008), these ceramics could date to another time period. More investigation in the future on the fringes of the surface collection will help to clarify the extent of the site, since our geophysical data did show structures beyond the arbitrary grid. However, for now, I am confident that the area covered does represent the extent of Moche fine wares and therefore the extent of ceremonial and ritual activities at Licapa II.

The surface collection was conducted over an area of 34 ha. that was divided into a series of 69, 50 x 50 meter grids laid out in a checkerboard pattern (Figure 4.2). Crewmembers were each assigned one 50 x 50 meter grid at a time. The crew members started at the southwest corner of the grid, walked 50 meters to the north, walked two meters to the east, turned around and walked 50 meters south until the entire 50 $m^2$ was covered. They collected all diagnostic wares they saw, drew any significant landscape features, and noted any special finds with their hand held GPS unit. Special finds included full vessels, or unique clusters of sherds.

The results of the analysis from this survey will be presented in the following chapter. However, to summarize, the highest concentration of ceramics were found around the main huacas (Huaca A and Huaca B). Not only were there more ceramics in these sectors, the ceramics were of a finer quality than the sherds found in the outlying areas.

The surface collection also revealed that there are differences in the types and styles of ceramics found in the different sectors of the site. These spatial differences were confirmed by excavation. For example, I found a style of ceramic only around Huaca A. The paste was very orange and sometimes with a matted white slip. This type of ceramic was also found in the excavation of Huaca A, as will be detailed below. Ceramics found between the two huacas were traditional Larco sequence phase IV and V. Ceramics found on Huaca B also followed a slightly different pattern: this is the only area in the immediate monumental core where Late Moche northern ceramics were encountered. However, a number of examples of Late Moche sherds were also found near sectors M7 and N6, located near the proposed storage area (Figure 4.2). Also of note, twenty-three instrument fragments were clusted near Huaca B, which may relate to the ceremonial funtion of this part of the site. When combined with the results from the radiocarbon dating, this pattern suggests that the different sectors at Licapa II were used for different purposes at different time periods. The results of the ceramic analysis and radiocarbon dating will be discussed in more detail in the following chapters.

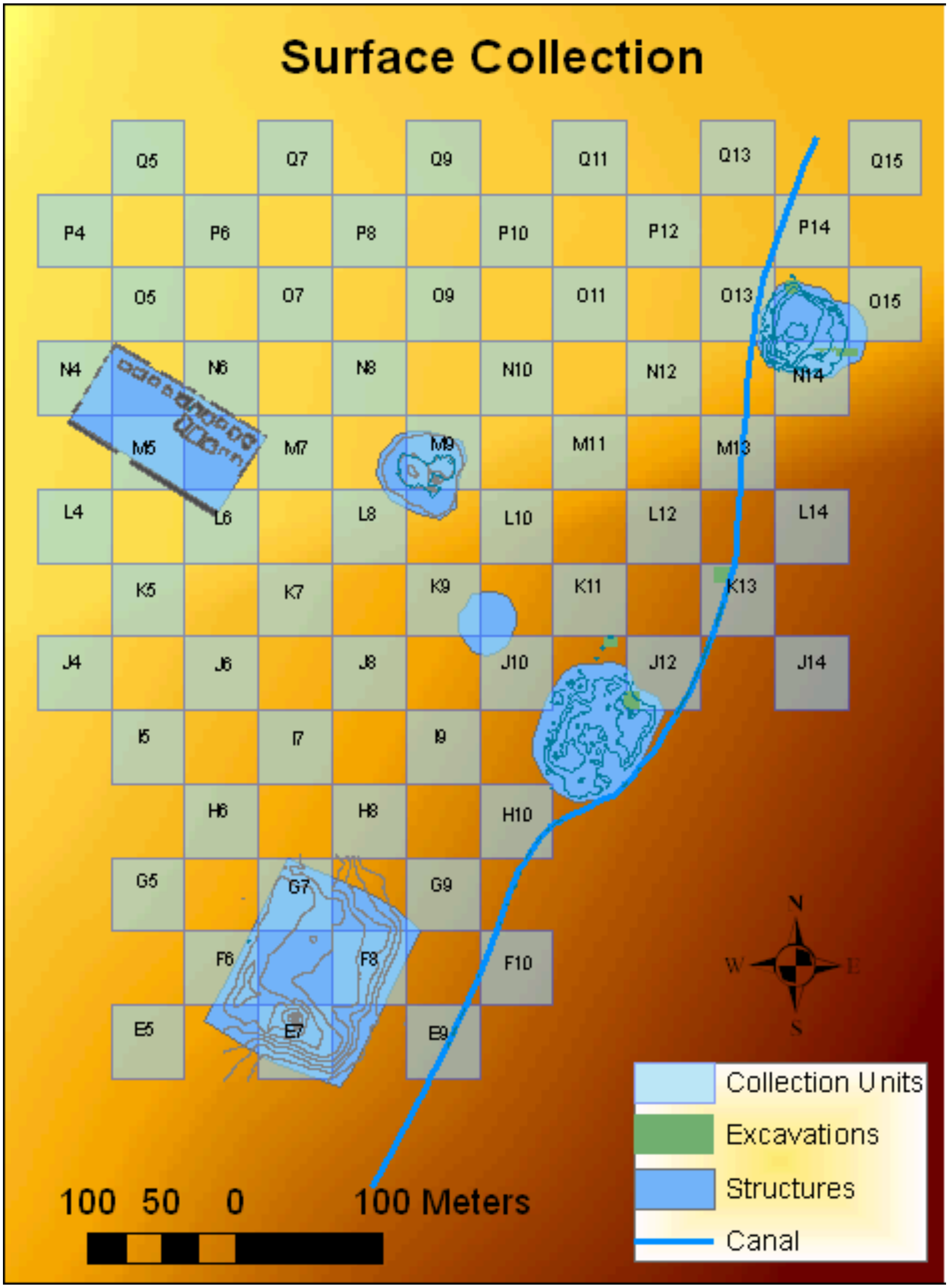


**Figure 4.2: Surface collection units at Licapa II.**

## Excavations

One of the major goals of my project was to determine architectural form of the huacas and the chronology of the occupation of Licapa II. In order to achieve this goal excavation units were placed on each of the two huacas and between them (Figure 4.3 and Figure 4.4). Since there are some observable similarities between Licapa II, El Brujo, and Huacas de Moche, excavations were geared towards investigating areas where comparisons could be made among these three sites. For example, excavations at Huaca Cao Viejo in the Brujo Complex and Huaca de la Luna at Huacas de Moche have demonstrated that these two pyramids were stepped and constructed in multiple phases. There are also residential areas between the two main huacas at these complexes. Therefore, excavations at Licapa II were devised to investigate the construction phases and forms of the huacas and to verify whether or not a residential area existed between the two huacas. From the excavations I was able to determine that although superficially Licapa II appears a lot like El Brujo or Huacas de Moche, there are marked difference in forms of the huacas, construction techniques employed, and function of the area between the huacas, all of which will be detailed below.

My excavations at Licapa II also determined that there were distributional patterns in the types of ceramics and other artifacts encountered at the site, which was also clarified through the surface collection. Radiocarbon dating confirmed that this pattern of distribution was related to the fact that the various sectors were used at different times, but also for different purposes.

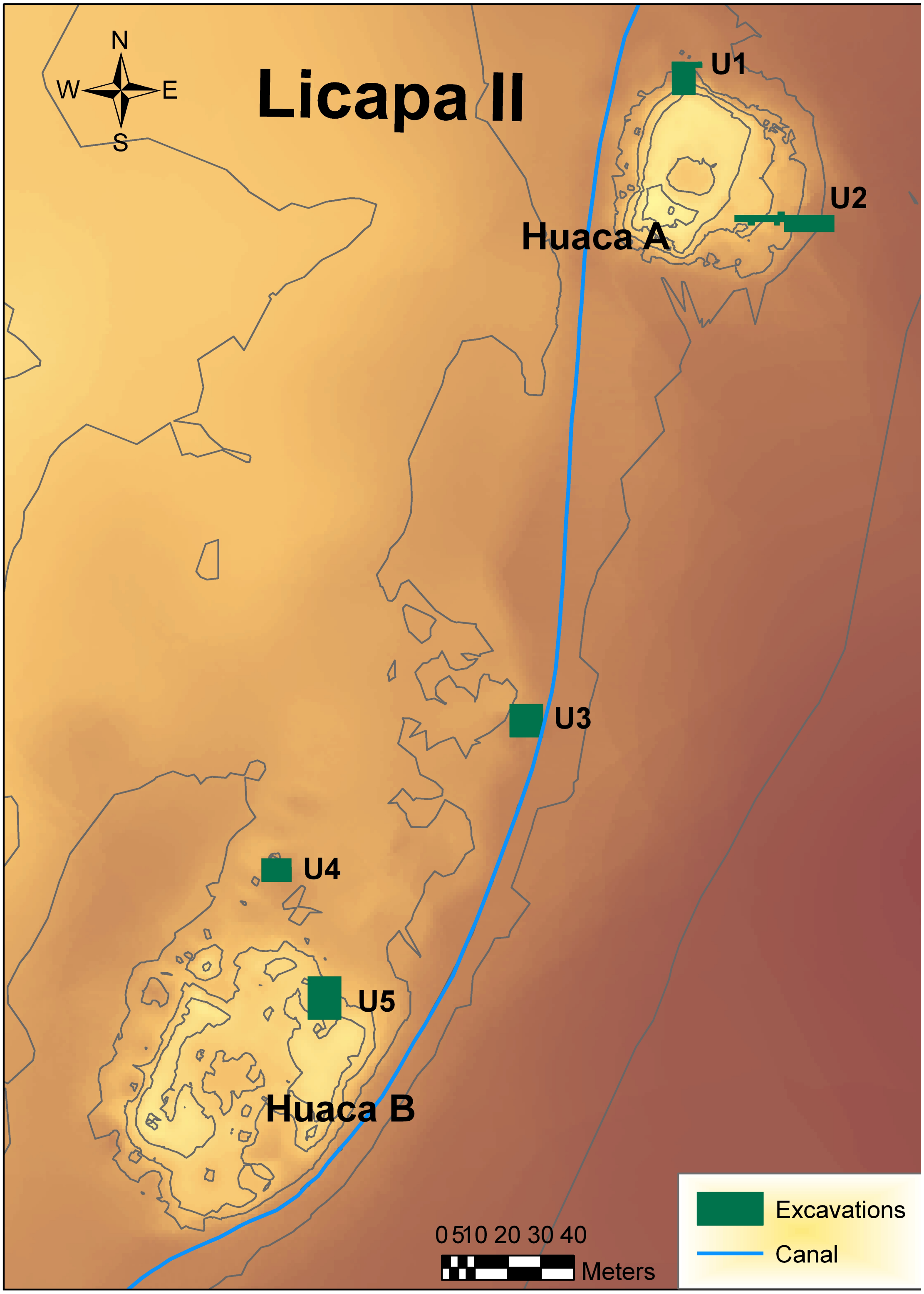


**Figure 4.3: Excavation unit locations at Licapa II.**

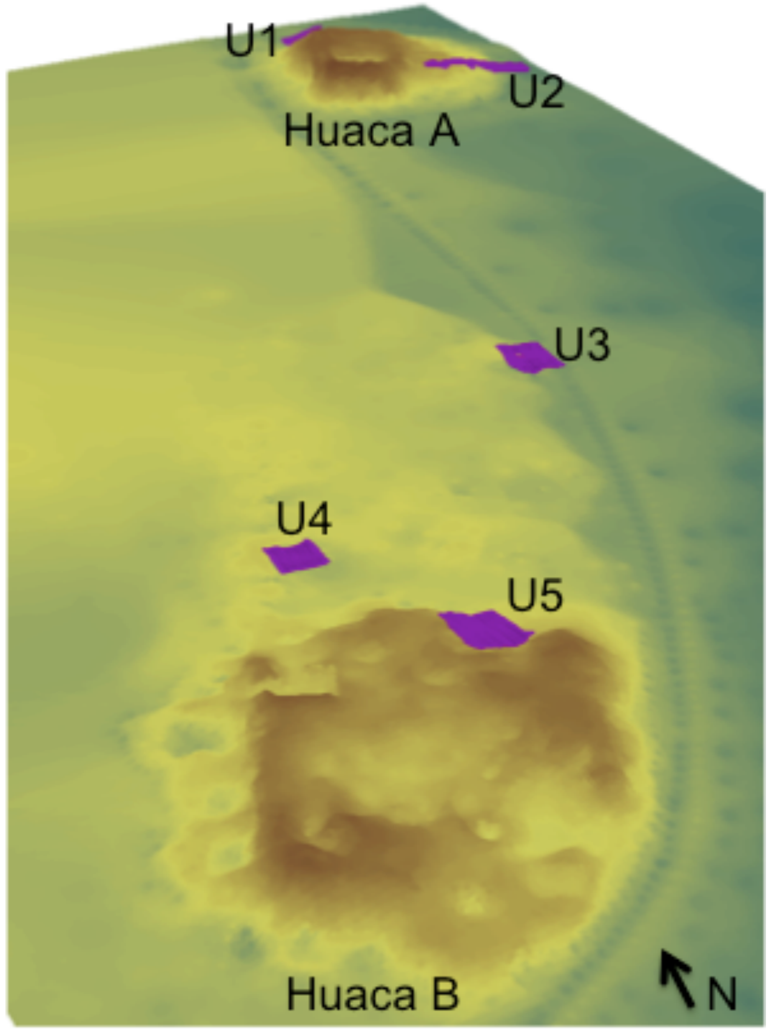


**Figure 4.4: A 3D view of Licapa II with location of excavation units.**

Excavation Field Methods

The units were established on a north south axis in the WGS 1984 UTM coordinate system with a total station. All units were excavated in natural stratigraphic levels that were defined by soil or architectural changes. Certain features, such as tombs, were treated as separate contexts from the surrounding unit and each level within the feature was recorded separately. Test pits and extensions were added to Units 2 and 4. These were treated as separate units. For the excavations on the huacas, all rubble and loose adobes were removed first to expose a clean surface. Then additional adobes were removed to understand the construction sequence. I tried to leave as much intact as possible to preserve the huacas.

All the removed sediments from each layer and context were processed through a ¼ inch screen and all artifacts were removed and bagged according to artifact type and context. However, to save space only diagnostic ceramics were collected. Each bag received a tag coded for material type and context. The coding system and tags I used were similar to the system employed by the San José de Moro project (see Appendix A.1 for coding system). The forms for the tags consisted of two parts separated by a perforated edge. The same information was recoded on each half. The upper half was removed and tied onto the bag with raffia. I used different colored raffia for the different units for easy distinction. I saved the bottom half of the form so I could enter it into an excel spreadsheet during the evenings. Examples of all the site forms for this project can be found in Appendix A.2 and the list of all artifacts in Appendix A.3.

Each level/ feature level was cleaned and thoroughly photographed with a north arrow, scale bar, and sign. Once photographed, a 1 x 1 meter grid for drawing was established over the entire unit using stakes and string. The X,Y (0,0) datum for this grid was in the southwest corner of each unit and all measurements were kept consistent from this location. The contents of every level were drawn to scale on millimeter graph. Over the course of our topographic mapping, eleven datums were established across the site. The datum closest to each unit was used to take multiple height measurements for each level and feature. Therefore, all the depths/ heights were recorded as meters above sea level (masl).

All the materials were taken to the laboratory located in the field house and were immediately processed. All ceramics and lithics were washed and dried. If ceramics were from adjacent parts of the same vessel, they were glued together. Fragile materials, aside from organic and soil samples, were dry brushed clean. Every artifact was labeled with a unique code that corresponded to the tag code, and therefore, the location where it was found. This code was either placed on the artifact itself, or on a piece of paper bagged with the artifact.

Below is a description of the excavations in the three different sectors of the site, Huaca A, Huaca B and between the huacas. In this section I describe the architectural and artifact remains and contextualize these findings within the site as a whole.

## Huaca A

### Huaca A Construction and Form

Huaca A measures 55 m x 57 m at its base and is roughly 9 m at its highest point. The base of the huaca sits at roughly 148 meters above sea level (masl). Huaca A is oriented 24 degrees east of north, as are Huaca B and the structures between the huacas. Initial observations suggested that Huaca A had a stepped façade on the east side, but was more or less vertical, or slightly inclined, on the other sides. The summit of Huaca A is currently characterized by a large sunken court, which was likely expanded by looting through the centuries. The summit also contains the remains of a corridor along the top of the western side, which potentially extended around the top of the northern side. Further excavations are needed to determine the function and form of the top of the huaca. However, our excavation of the northwest corner and the eastern terraces elucidated aspects of the construction techniques and functions of this structure.

Excavation Units 1 and 2 were placed on Huaca A to test if there were multiple phases of construction, to determine the overall form of the building, and to understand the construction techniques employed (Figure 4.5).

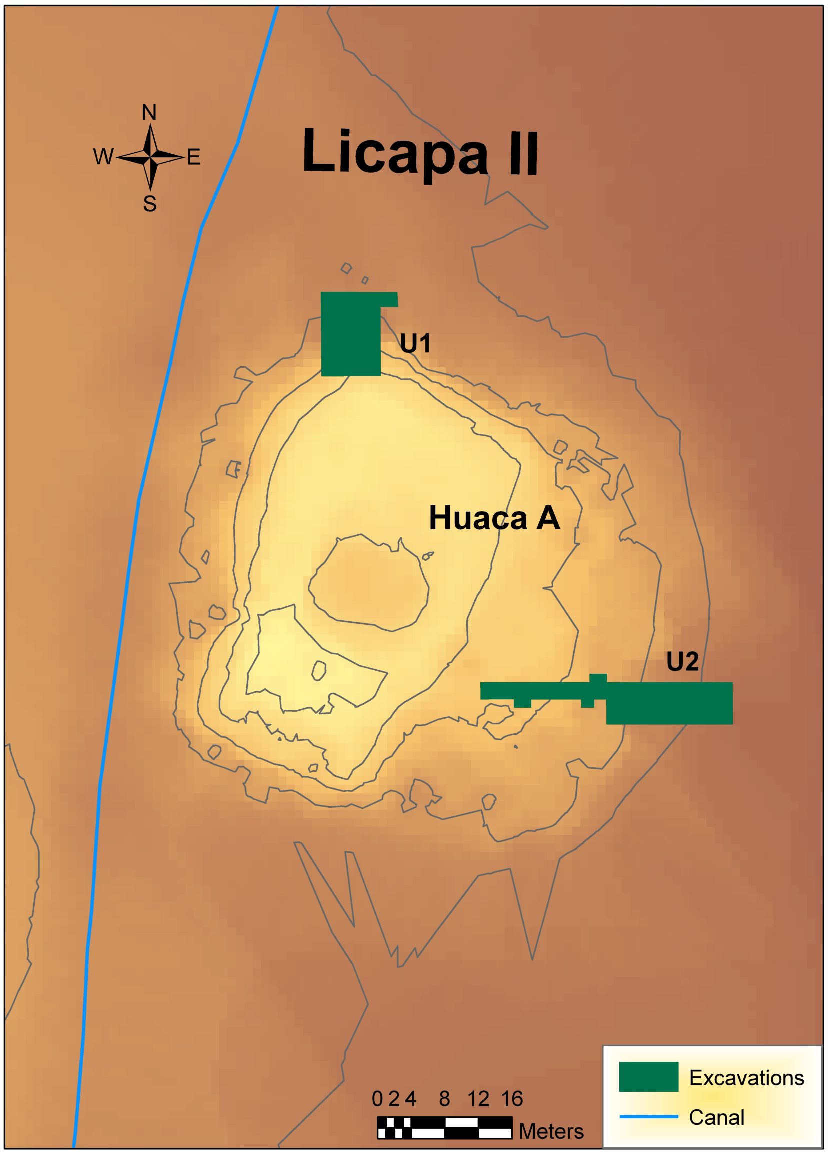


**Figure 4.5: Excavation units on Huaca A: Units 1 and 2.**

Unit 1 was a 10 x 9 meter unit placed over the northwest corner of Huaca A to determine if multiple phases were present and to understand the form of the exterior façade in this location. This excavation also aimed to understand if the bricks and brick laying techniques changed over time and/ or if they resembled patterns seen at other documented Moche sites.  Unit 2 was a 30 x 5 meter trench located across the eastern side of the huaca where surface topography suggested that there might have been terracing.   The excavation of these two units determined that there were at least two major phases of construction of Huaca A, and at least one remodeling of the final phase. It should be noted that it is possible that there were earlier phases of this building that were not reached in the excavation.

*Unit 1*

The goal of the excavation of Unit 1 was to determine the building phases of Huaca A and see if any floors could be located. Both of these goals were satisfied by the results of the excavation.  From removing the rubble on the NW corner of the huaca we were able to uncover two different buildings (A and B) and at least one remodeling ($A^1$) of the last phase.  It is still possible that another building could have existed further inside the interior huaca, but our excavation did not uncover any further evidence.  We also found two clay floors and an adobe floor that was associated with the last clay floor.  The adobe floor may have been a later addition but it was in use at the same time as the last floor.

The interior building (B) clearly has one narrow terrace on the northern side. Currently there is micro-stepping, or individual adobe creating small incremental steps above this terrace (Figure 4.6 and Figure 4.7).  This micro-stepping was likely the result of the erosion process and not cultural in nature.  It is possible that this first terrace extended up to create a second now destroyed terrace.  A relatively flat facade exists at the upper limits of huaca that could be the remnants of the upper terrace, but we did not clear it off completely because it was destroyed from the erosion.

On the west side of the interior building, or building B, we found a small single micro-terrace. This micro-terrace is only about 10 cm wide and was covered with plaster (Figure 4.8). The micro-terrace on the west side was different from the micro-stepping on the north side since it was definitely cultural in nature. Furthermore, the western wall of building B is slightly angled in towards the center of the huaca and was not perpendicular to the floor. The bricks of building B are all roughly 32 x 22 x 13 cm and stacked at varying orientations without any apparent patterns between the rows. The stacking of adobes will be elaborated on in Chapter 7.

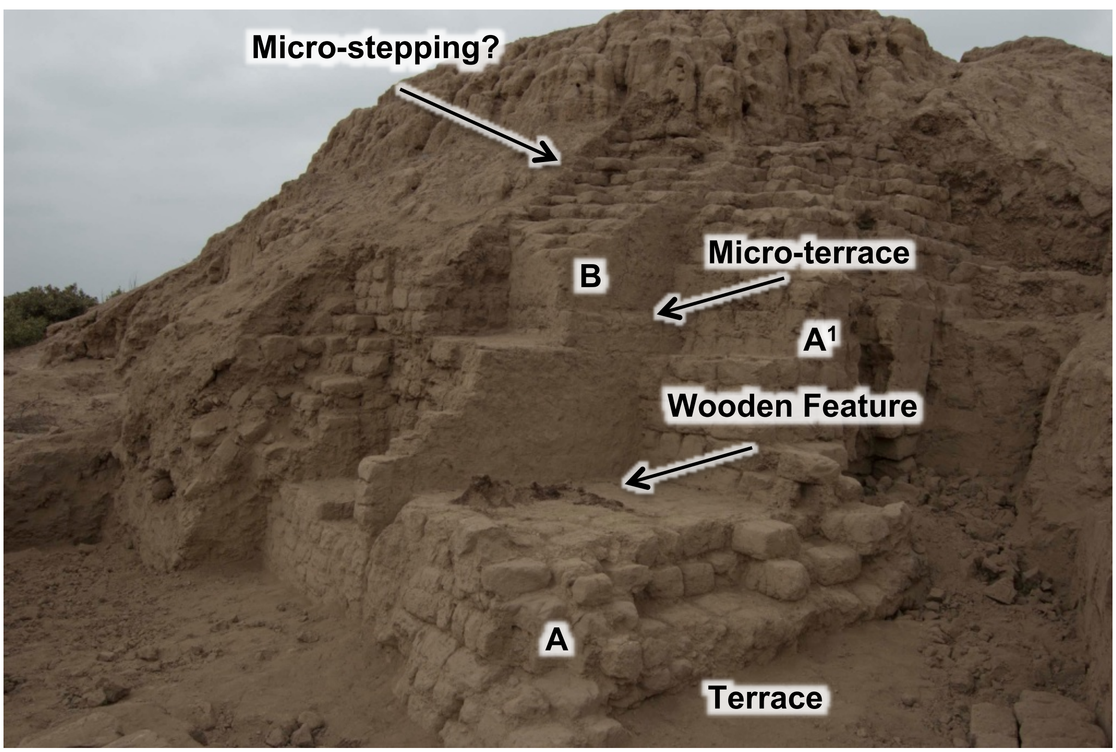


**Figure 4.6: Northwest corner of Huaca A showing building B and building A. The micro-stepping, the micro-terrace, and the wooden feature can be seen in the photo.**

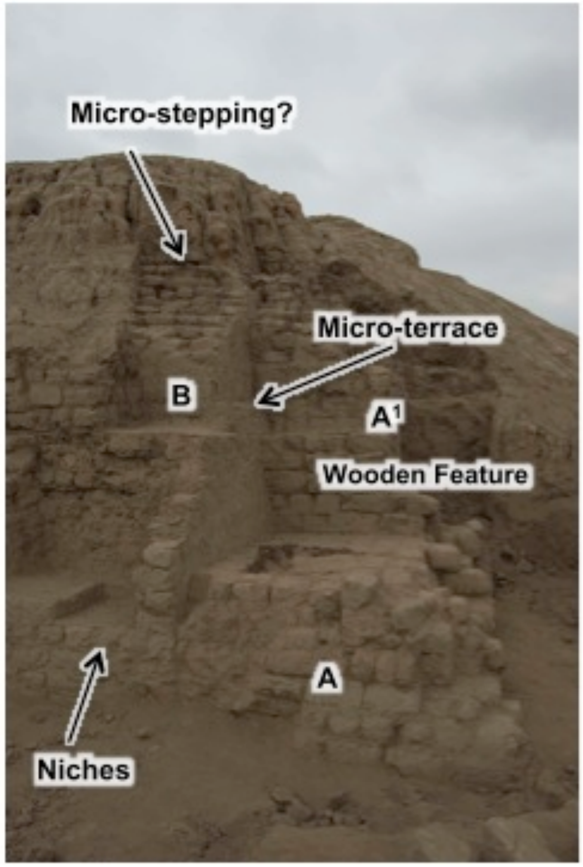


**Figure 4.7: Northwest corner of Huaca A facing south. Photograph shows the micro-stepping, micro-terrace and the wooden feature.**


**Figure 4.8: A detailed view of the micro-terrace.**

The outer building, or building A, was not as well preserved as the interior building and it was difficult to tell if there was terracing on the northern facade of this last phase or if there was also something similar to micro-terracing. However, the terracing was clear for building A on the west side of the huaca. It appears that the building A first consisted of a very low, one meter high, terrace on the west side, which still incorporated the use of building B and was constructed with bricks of the same size as building B. This terrace extended two meters out from the western face of the huaca. Some type of wooden structure, or feature, was on top of this terrace (Figure 4.9). This feature was composed of two segments, or branches, from an *algarrobo* tree. They were arranged in a backwards L shape, with the long axis oriented with the side of the huaca and the shorter segment abutting the southern end of the long segment. The longer segment was 80 cm long and the shorter one was 60 cm long. Most of the wood had decomposed to dust, but some larger fragments were present and sampled for $^{14}C$ dating. They yielded two dates between A.D. 580-770; both were calibrated in Oxcal with the Southern Hemisphere calibration curve (see Chapter 8) (McCormac et al. 2004).

This terrace and wood feature was eventually covered with another façade of adobes extending 120 cm from the western façade and 50 cm up from the original terrace. It therefore enclosed building B completely and created a new narrower terrace 70 cm wide and 1.5 meters tall on the west side of the huaca. The adobes in this final remodeling ($A^1$) were a mix of the same size used in the other buildings and a larger size that was on average 39 x 25 x 19 cm. The larger adobes were only on the outer most façade and were more regularly placed than the adobes from buildings A and B. They were stacked in rows so that the short side of the adobe was horizontally exposed in profile. This is known as the header position (see Figure 7.13). The placement of adobes will be elaborated upon in Chapter 5.

**Figure 4.9: Wooden feature on terrace.**

Feature 1, a jumbled pile of adobe, sat on top of this western terrace and may have been deliberately placed there as some sort of closing act (Figure 4.10). On the other hand, the adobes could have fallen in antiquity due to an earthquake or other natural or anthropogenic event. During the last building phase the north side of the huaca was also filled in, but as mentioned, it is unclear if a terrace once existed on the exterior building. There may have been some ornate features, such as niches or small “windows” on the north side of the huaca during the last phase, one of which was visible in the excavation

(Figure 4.11 and Figure 4.12). However, once the adobes were removed from within what appeared to be the niche, no detectable pattern could be followed. Therefore, these features could just have been related to the fill from the final phase and the way the huaca was constructed.


**Figure 4.10: Feature 1 Unit 1, a jumbled pile of adobes.**


**Figure 4.11: Niche seen in northern facade of Huaca A.**

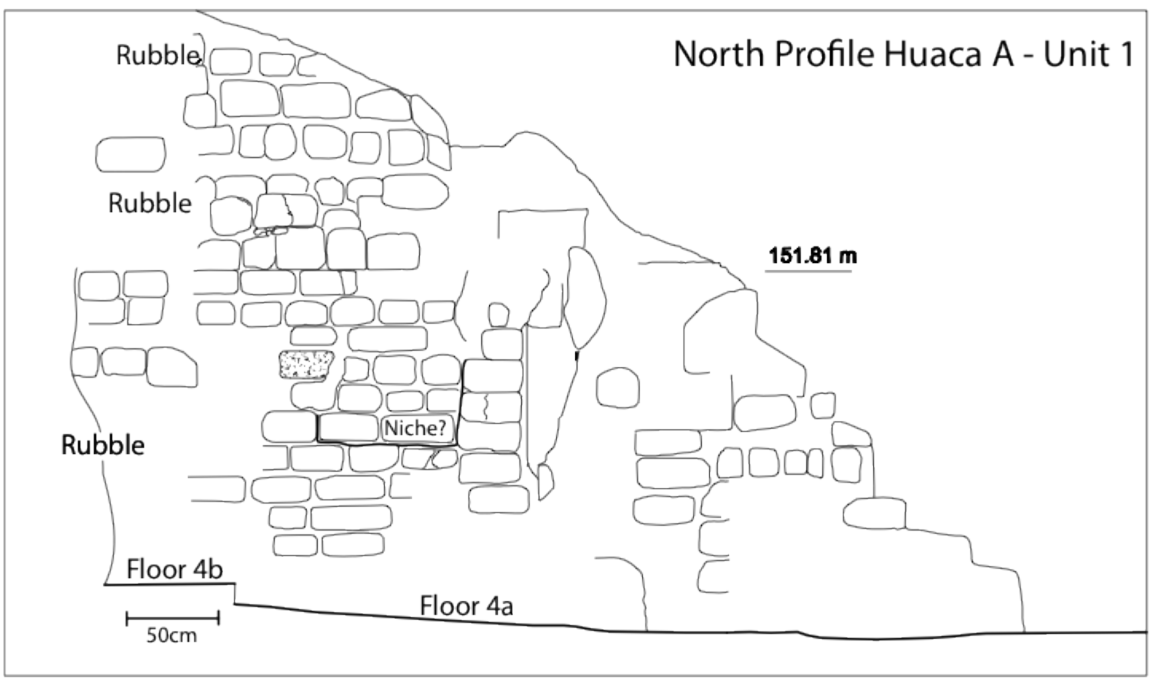


**Figure 4.12: Drawing of northern facade of Huaca A showing the niche.**

From this excavation I was able to better understand how the northwest corner of this huaca was constructed. We identified two clear construction phases and a remodeling event, recognized by different size bricks. We also discovered two clear floors associated with the huaca and encountered the sterile soil below the huaca.

*Unit 2*

A second unit, Unit 2, was placed on the eastern side of the huaca to further investigate its form and function (Figure 4.13). The excavation of Unit 2 revealed the presence of two superimposed terrace walls, similar to the pattern of huaca interment seen at Huaca Cao Viejo and Huaca de la Luna. These walls demonstrate that the eastern side of the huaca consisted of at least two buildings. However, the presence of multiple well prepared but broken floors below the lower terrace makes it difficult to understand how the floors and the terrace walls were related to one another and if they represented different construction phases or were part of the same phase. Therefore, I do not designate the same building phase letters as I do for the northwest corner of the Huaca, because there is insufficient evidence to concretely relate these two sides. A schematic drawing facing south of a cross section of the eastern extension up to Wall 2 helps visualize the relations between the floors (Figure 4.14). This rendering allows me to infer that there were at least three building phases on this side of the huaca. The eastern side of the huaca during the two final phases consisted of at least two platforms that stepped to the east at a 115-degree angle. A third platform may have been on the lower slope, but due to erosion, no concrete evidence remains. It is also unclear if all three construction phases represent separate periods of use or just demonstrate how the huaca was constructed.

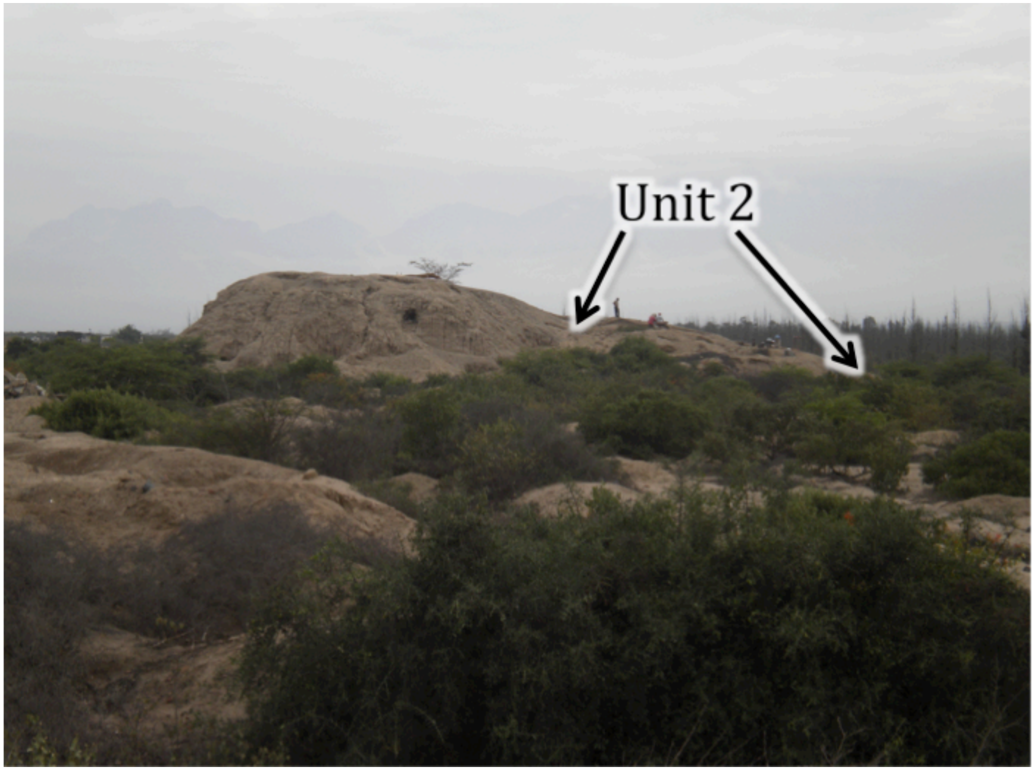


**Figure 4.13: Huaca A facing north. Location of Unit 2.**

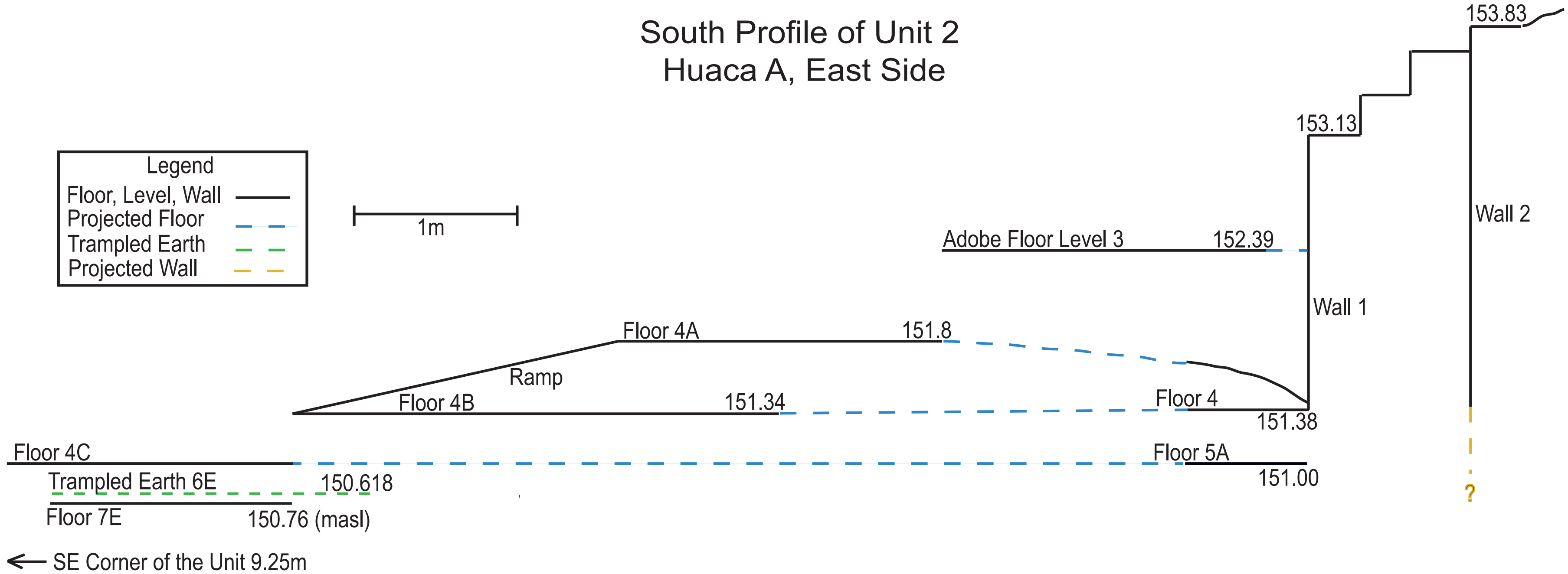


**Figure 4.14: Schematic drawing of the eastern, lower portion of Huaca A looking south.**

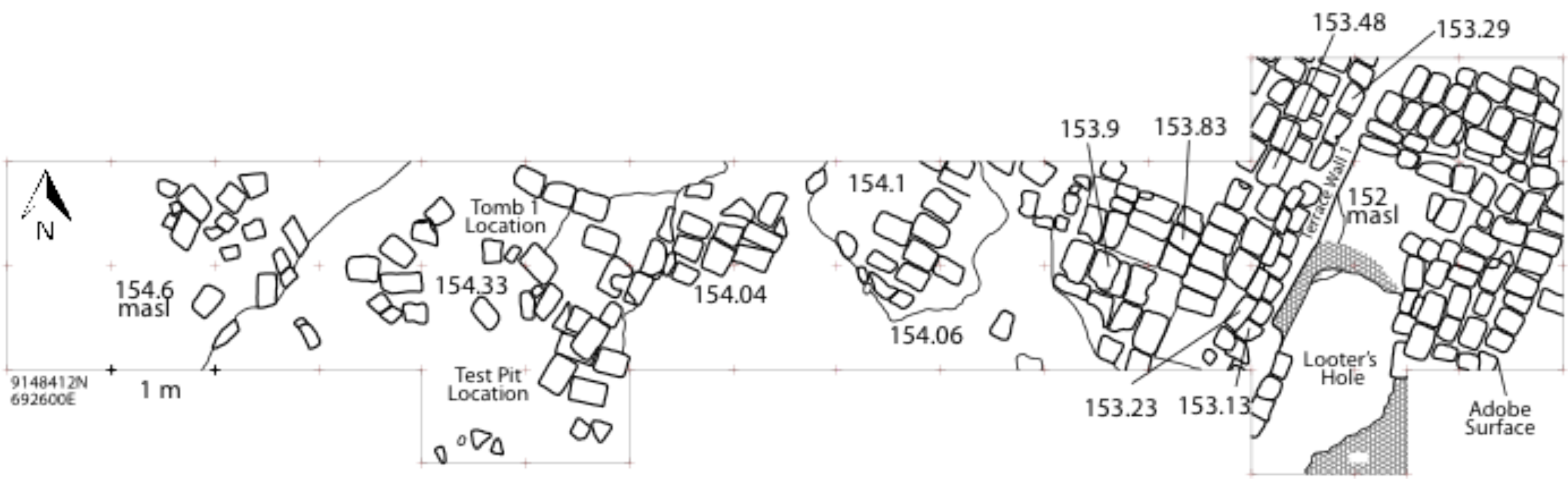


Figure 4.15: Plan view drawing of the west half of Unit 2, to the west of wall 1. In this image the location of Tomb 1 is labeled. Heights are also given in meters above sea level to show how the topography slopes to the east.

The first phase of construction can only be seen on the lower/ eastern part of the excavation to the east of Wall 1 (Figure 4.15 and Figure 4.16). This phase is characterized by floor 4C and floor 5A. These are the same floor[6], which is at an absolute depth of 151 (masl) (see Figure 4.14 for relationship). This floor is below the level of the base of Wall 1 and was obviously constructed before the addition of this wall. This floor may have been associated with Wall 2, or another retention or other wall further inside the huaca. It should be noted that only a small portion of Wall 2 was exposed by a looter's tunnel through Wall 1, so its direct association to the floors remains unknown (Figure 4.17).


**Figure 4.16: View of Wall 1 looking west. The looter's pit in the wall can be seen in the photograph. Also visible is the adobe surface.**

[6] Since these are the same floor they should theoretically have the same number, but I did not realize they were the same until after excavation. I kept the original numbers because the field notes and artifact bags make the distinction between the locations they were encountered.

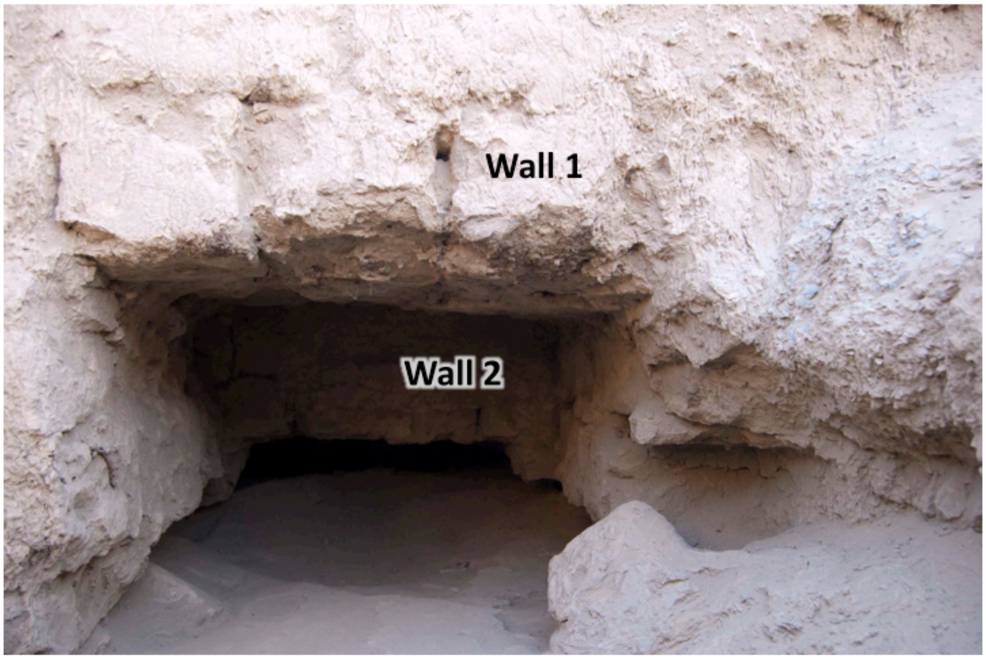


**Figure 4.17: Wall 1 and Wall 2. Wall 2 can be seen because of a looter's hole in this part of the huaca.**

The second visible phase of construction is the addition of Wall 1 and floor 4B/4. The base of Wall 1 is associated with this floor and is seen in the southern profile shown in Figure 4.18. Floor 4A also is associated with the base of Wall 1, since this floor slopes to the west slightly and meets up with 4B/4. Floors 4B and 4A were obviously in use at the same time since a ramp links the two together to the east of Wall 1 (Figure 4.19). However, it is unclear if 4B/4 was in use before the construction of 4A. A layer of clean sand fill separates all of the floors in the structure from one another. This use of fill is very different from what is seen on the upper adobe terrace and on the western and northern façade and will be discussed at length in Chapter 5. Radiocarbon dates show that the floors date to roughly the same time, although the date range for floor 4C (A.D. 430-620) is slightly earlier than for floor 4A (A.D. 470-650).

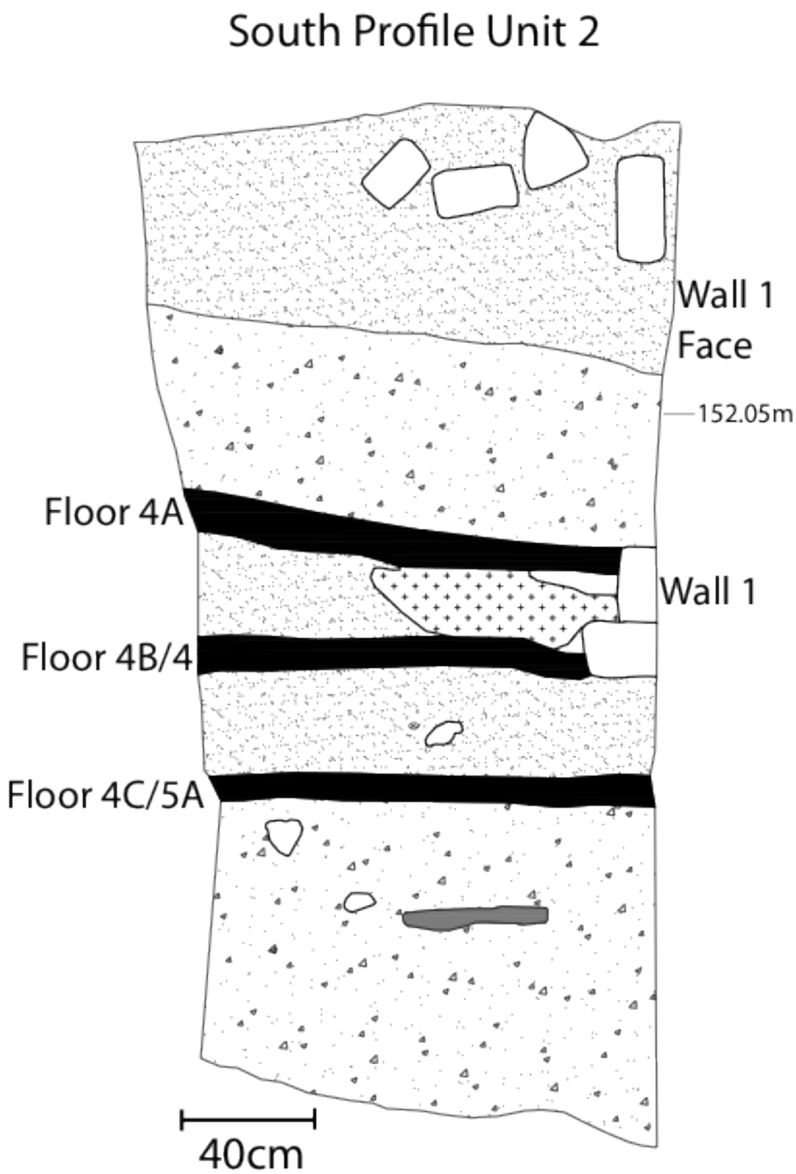


**Figure 4.18: Southern profile inside looter's pit of Unit 2. Profile shows location of superimposed floors.**

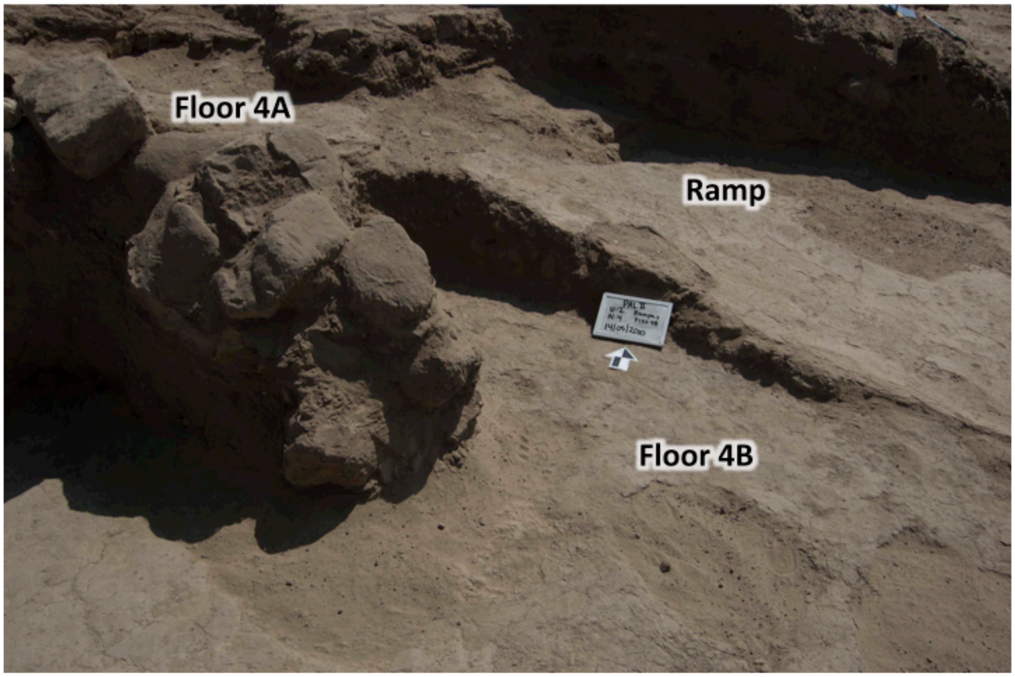


**Figure 4.19: Ramp showing that floor 4A and floor 4B were connected.**

The final phase of construction can be seen on the western side of the excavation, towards the top of the huaca and in a relatively flat area above the terrace wall (Figure 4.15 and Figure 4.20). In this area we placed a 2 x 3 meter test pit to understand the construction techniques employed. The excavation revealed that this portion of the huaca was an adobe platform facing at a 115-degree angle east of north. In general, the construction technique is poor and not well executed and was built by dry stacking layers of adobes and silty sand with some gravel. In its current state the platform is badly eroded and characterized by arroyos and watercourses. The platform extends from the western end of our excavation to the east and ends at the top of Wall 1. Wall 1 was exposed to severe rains in the past and was badly damaged. This seems to have occurred after looter's exposed the wall since water laminated sediments are seen in the cut below Wall 1 and Wall 2.

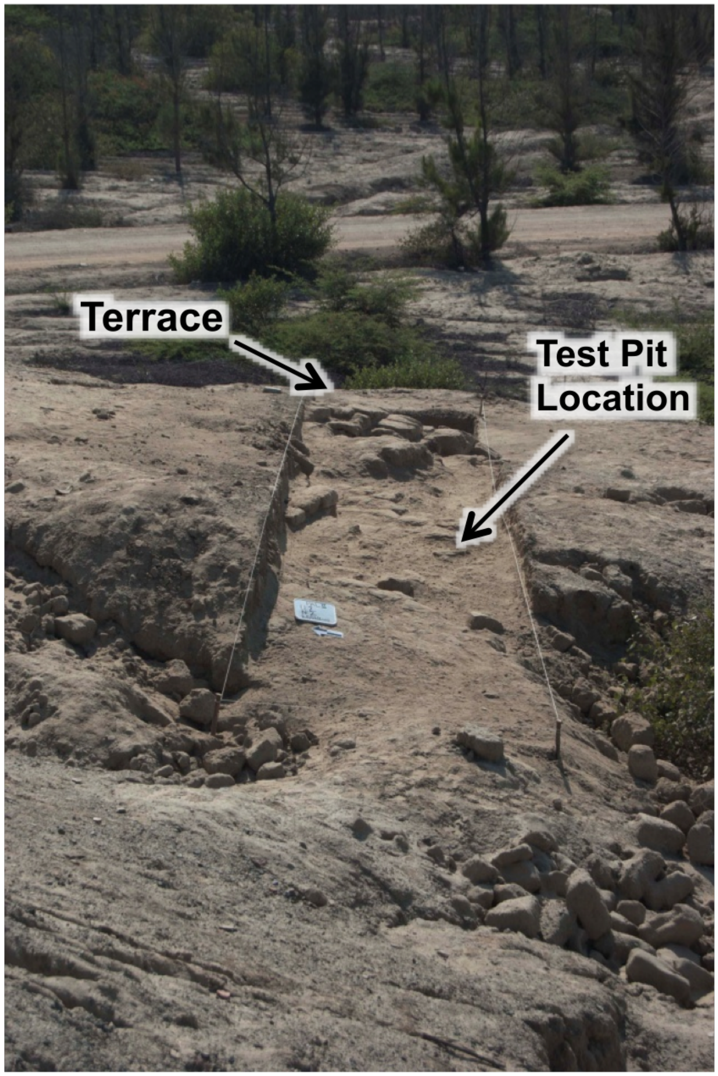


**Figure 4.20: Flat area of the huaca above the terrace wall. Looking east.**

There was an uneven adobe surface to the east of Wall 1. The adobes were above floor 4A and only extend roughly two meters to the east from the base of Wall 1 where they stop and a large burned area was encountered (Figure 4.21). A corncob from this burned area dates to (A.D. 560-660). Because of the slope, to the immediate east, but also underneath the burned area was floor 4A indicating that the burned area represents the final phase of use of Huaca A.

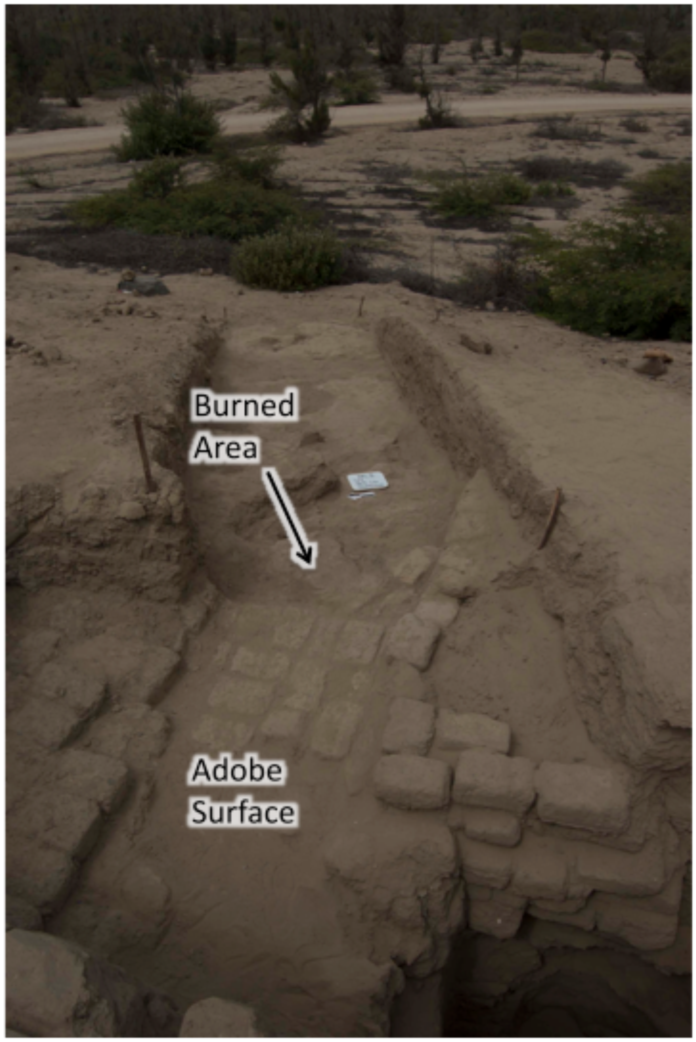


**Figure 4.21: Adobe surface and burned area east of Wall 1, Unit 2.**

Because of the location and uneven levels of the adobes to the west of the burned area and east of Wall 1, it is possible that the adobe surface was related to a remodeling and extension of Wall 1 that created a lower step, or series of steps, now mostly destroyed in this location from looting. If this were the case, rather than creating a terrace wall, the adobes would have potentially stepped down more gradually and in smaller increments. Although the remains of this surface are found abutting Wall 1, they are also found in the eastern profile just to the east of the large looter's hole that exposed the wall (Figure 4.22). The adobes were added after the construction of Wall 1 because, as noted, Wall 1 was associated with floors 4A and 4B/4 and the adobe surface is found above these floors. The adobes appear to have destroyed floor 4A when they were added in this location, or they are sitting directly on top and obscuring the floor. The top of this adobe level seen in the profile in Figure 4.22 is at a height of 152.42 masl, which is also the maximum height of adobe surface to the east of the wall in general. At present, the minimum height of Wall 1 is 153.01 masl, but adobes could have eroded from the top. Nonetheless, the 60 cm difference between the current top of the adobe surface and the minimum height of Wall 1, suggests that smaller steps, rather than large terraces, could have characterized the east face of Huaca A during the final phase. This is also possibly suggested by the current slope of the architecture seen above Wall 1 (Figure 4.23 and Figure 4.15). However, this slope could have been created purely by erosion and Wall 1 may have originally have been much higher.

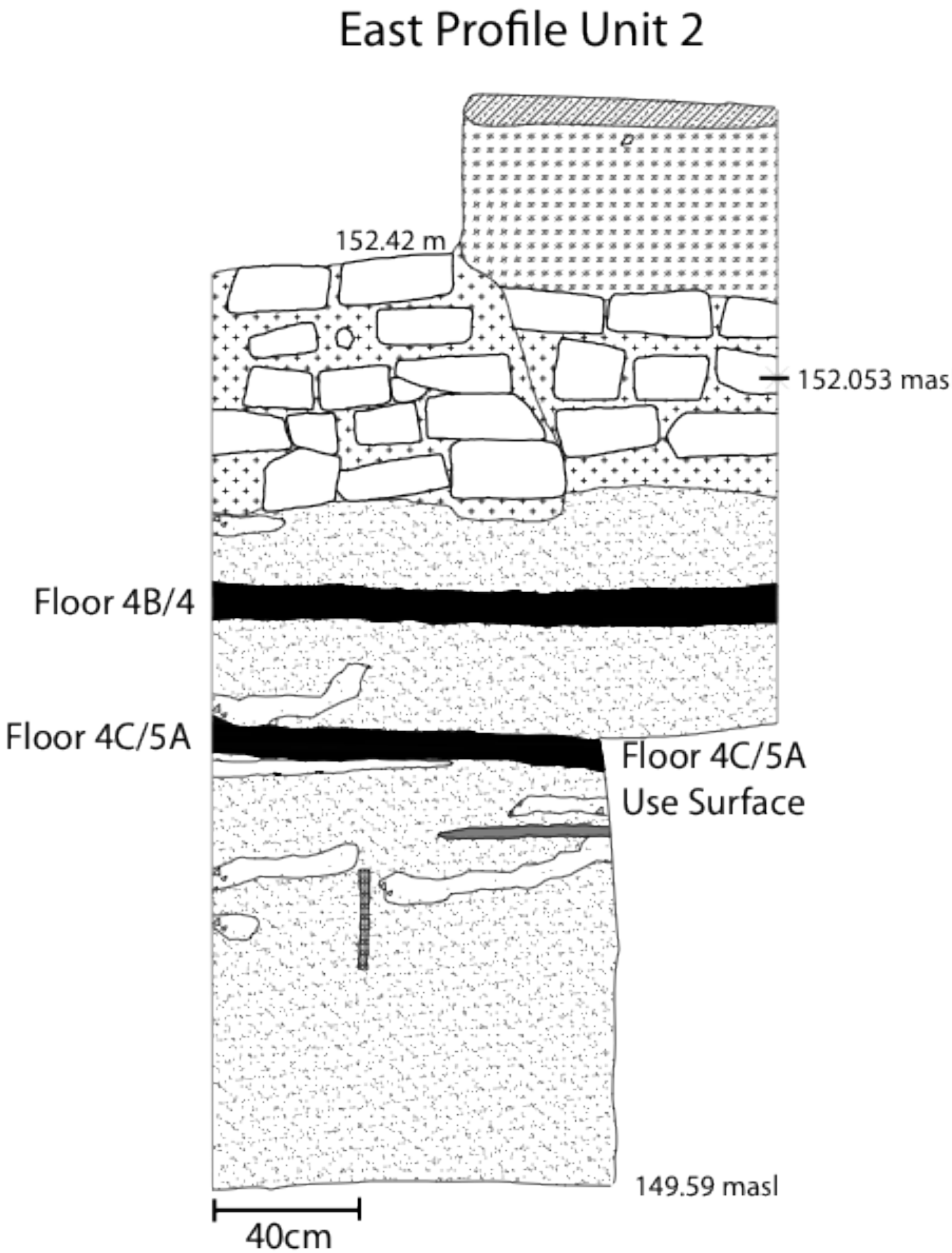


**Figure 4.22: East profile inside the looters hole of Unit 2.**

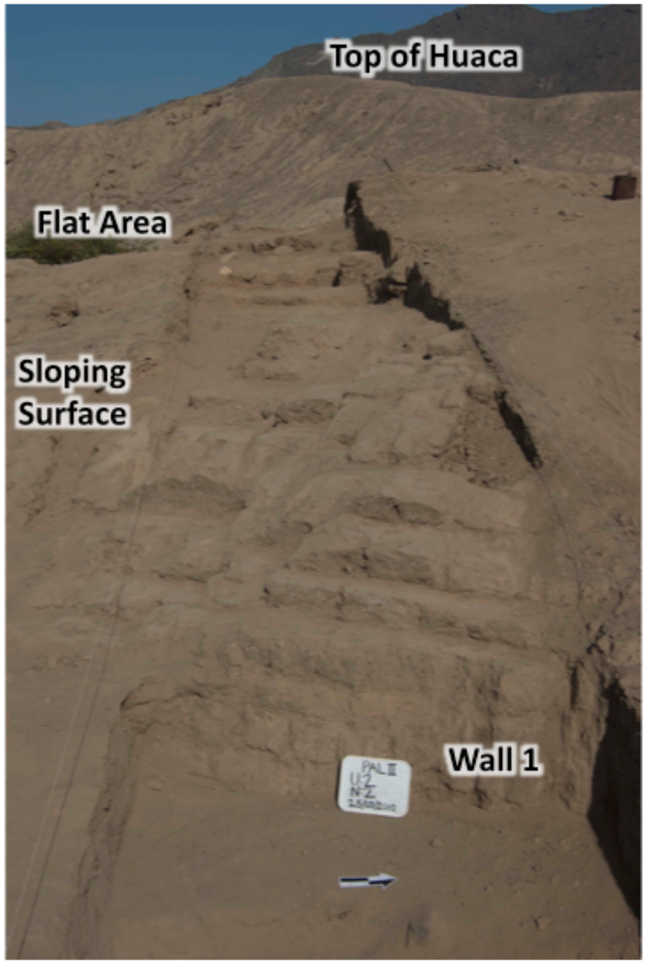


**Figure 4.23: Photo of Unit 2 facing west. The photo shows the slope between the flat area and Wall 1.**

Adobe architecture also was encountered roughly six meters to the east on the lower eastern slope of the huaca (Figure 4.24). The architecture (form, placement, orientation and size of adobes) on the lower slope is similar to the architecture on the higher platform to the west, but it is in a poor state of conservation. Therefore, it is unclear if this architecture was related to the final phase of construction or if it was associated with an earlier phase since it was highly eroded. It is oriented at the same 115 degree angle east of north and currently creates a series of adobe steps, thus if there were steps on eastern side of the huaca these remains could be related.

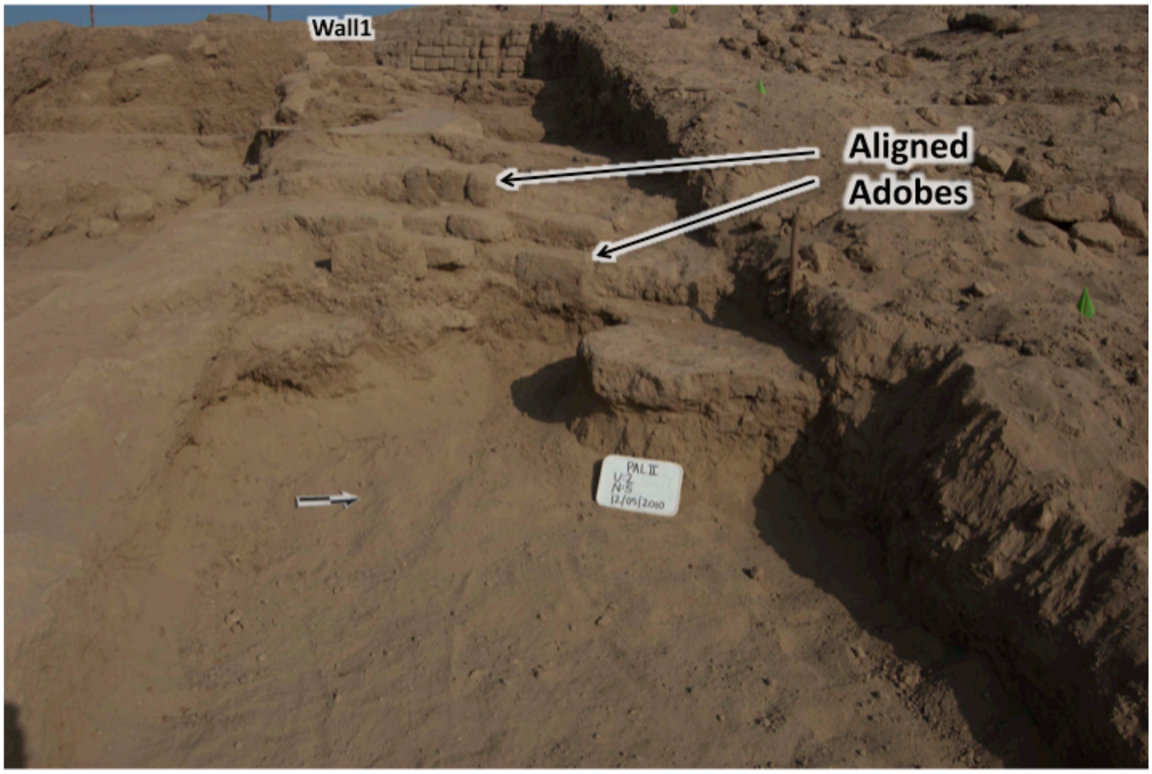


**Figure 4.24: Adobe architecture to the east of Wall 1. This photo is facing west.**

*Huaca A Tomb 1 and Materials*

While excavating the 2 x 3 meter test pit on the upper terrace to determine the construction methods employed there, we encountered the burial of an 18-25 year old female (Tomb 1) (see Figure 4.15 and Figure 4.20). The body was found below 10 courses of dry laid adobe and sand, demonstrating that the huaca construction of the upper platform was quite different from the pure sand and plaster floor construction seen on the lower platform.

The body was seated facing west in a semi-flexed position between the adobes, as though they created a seat (Figure 4.25). The body exhibited no trauma and was in healthy condition at the time of death. The skeleton did have a fused vertebrae, however, but this would not have caused any significant trouble in life. The remains had a broken incomplete large ceramic basin in its lap that showed evidence of mending holes, although the remains of the entire basin were not found in the excavation (Figure 4.26). The basin contained one piece of burnt maize that dates to A.D. 540-670. There was no evidence of clothing with the body, however numerous small clay beads were found around the neck. The string for these beads was never located indicating that other textiles at one time may have been present. The top of the cranium was encrusted in mud, indicating that some sort of liquid was poured over the head in antiquity. There was no evidence of mud above the cranium or on any other part of the body, suggesting this was a deliberate and localized act.

Other Moche sites, such as San José de Moro and Guadalupito show evidence for pouring liquid over areas as part of a closing ritual (Claude Chapdelaine, personal communication; Luis Jaime Castillo, personal communication). This liquid could indicate that the burial was associated with a closing ceremony related to an event associated with the huaca, such as a large tomb or as a commemoration of one construction phase before starting another. At El Brujo, the individual in Tomb 1 and the Señora de Cao were buried with the mouth of a jar level with the floor surface above the tomb. The hypothesis is that visitors periodically visited and poured libations into these vessels (Franco et al. 2003; Millaire 2002; Mujica 2007).

**Figure 4.25: Burial seated in a flexed position facing west.**

**Figure 4.26: Basin found on the pelvic area of the skeleton in Tomb 1, Unit 2.**

Other evidence suggests that this interment was part of a larger series of offerings (Figure 4.27). The base of the body was at 152.15 masl. About 70 cm above the body the bones of at least 24 *cuy,* or guinea pigs, and at least four camelids were found. Roughly 1.3 meters directly above the *cuy* and camelids two large vessels, one painted and one not, were encountered (Figure 4.28). These vessels looked as though they were broken *in situ*, but like the basin in the tomb, the vessels were not complete. These were found at 154.26 masl. Above the vessels and directly below a thin layer of rubble on the surface of the huaca we found a burnt textile wrapped around fragments of some sort of reed or vegetal material (Figure 4.29). This feature was found at 154.57, roughly 30 cm above the vessels and mere centimeters from the surface. Samples of the reed and the textile were sent for radiocarbon dating and yielded dates of cal A.D. 550-670 and A.D. 440-660 respectively. Therefore, the dates for the corncob associated with the burial and the burnt offering on top are effectively the same, indicating that the placement of the items likely occurred during the same event.

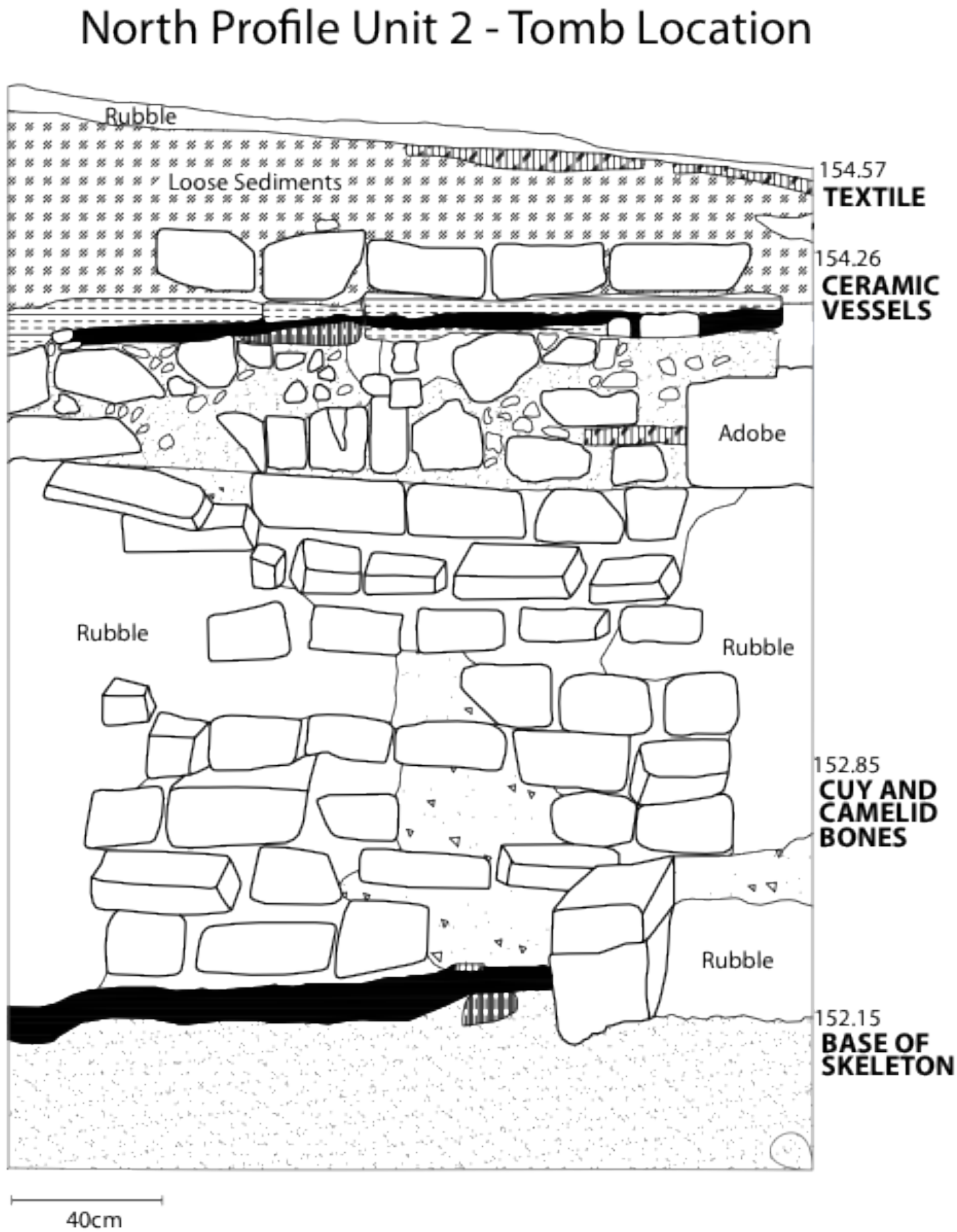


**Figure 4.27: North profile of test pit in unit 2 showing the location of the superimposed offerings above the burial.**


**Figure 4.28: Vessels found above Tomb 1, Unit 2.**


**Figure 4.29: Burnt textile found above vessels and Tomb 1, Unit 2.**

We stopped excavation at the level just below the burial; however, there were at least two meters of fill before we would have reached the base of the huaca. Excavation was halted because we were quickly approaching the end of the field season and the pattern of offerings suggested that we might have been potentially above an elaborate burial and there was no time to excavate it.

Superimposed offerings above important burials are common in Moche funerary practice (Millaire 2002). At the Huaca de la Luna Tomb 18 was found in the fill that covered building D and was associated with the construction of buildings B/C. Within this fill just at the level of the seal for building D and associated with the floor of Building B/C, three ceramics were found with their necks just at the ground surface. Tufinio (Tufinio 2004b) suggests that these were receptacles for liquid offerings for the person buried below. Sixty centimeters below the ceramic vessels was a 30 cm x 5 cm wood board. Below this board was a cotton pad wrapped with textiles. Below this, and 90 cm above the tomb, they found a cane box. Inside the box was an elaborate textile representing a feline with gold discs. Just at the level of the beams for the tomb another poorly preserved textile was found (Tufinio 2004b:35–38). This pattern of superimposed offerings is also noted at El Brujo where a double chambered tomb at the site of El Brujo was found below stratigraphically stacked sacrificial offerings of two females between 18 and 30 years old (Mujica 2007:195). Superimposed offerings above tombs are also noted for tombs at San José de Moro (Castillo 2011).

Returning to Licapa II and further suggesting that Tomb 1 was part of a series of offerings above a larger tomb was a looter’s tunnel that exposed Wall 2. This tunnel continued into the center of the huaca towards the general area where we were excavating. In the debris in the looter's pit associated with this tunnel we found the remains of a ceramic goblet, similar to those seen in the Sacrifice Ceremony (Figure 4.30) (Donnan and McClelland 1999). The remains of at least eight other cups or goblets were found in this same area, suggesting that the looter had encountered a potentially large and important burial inside the huaca.

The ceramic basin associated with the burial, the painted large vessel and the cups are all of what I define as the "Licapa A" ceramic style. Ceramics with this orangey paste and matted cream slip are seen in great quantity, but only in and around Huaca A. The forms of these ceramics are also quite different from ceramics found at other sites or other sectors of Licapa II. Therefore, I propose that they were locally manufactured and used. This style of ceramic and its larger implications will be further explored in Chapter 6.

**Figure 4.30: Goblet found in Unit 2.**

## Huaca A Bricks and Chronology

The majority of the bricks in Unit 2 averaged 32 x 22 x 13 cm, which is the same as the earlier phase of architecture in Unit 1. The large bricks associated with the last phase and described above were only found in Unit 1. This suggests that the last addition to the huaca was made on its west side and the east remained architecturally unaltered. Radiocarbon dates confirm this to some extent. The wooden feature below the final terrace with the large bricks dates to roughly the same time as the burnt area found on the final use surface of the lower platform on the east side (Adobe Floor Level 3). However, there are some discrepancies in these four sets of dates that will be further explored in Chapter 8. Two samples from the wooden feature of Unit 1 were taken and sent to different labs, Beta Analytic, Inc. and the National Science Foundation laboratory in Arizona. Two samples from the same context but of different of organic materials were also taken from the burnt area on the east side of Huaca A. A close examination of the dates reported from the two labs shows that the Beta dates are roughly 100 years later than the NSF dates when all are calibrated using the ShCal04 curve (McComac et al. 2004). Regardless of this problem, the latest dates from the east side are similar to the latest dates for the west side of the huaca. This will be discussed more in Chapters 7 and 8.

## Huaca A Implications

In summary, Huaca A was likely an important ceremonial structure in this part of the Chicama Valley from 450-700 AD. The presence of at least eight goblets demonstrates that elites were likely buried within the structure. The goblets suggest that the Sacrifice Ceremony involving these elites possibly took place here. Although the goblets themselves do not necessarily indicate the performance of this ceremony on Huaca A, the shape and form of the huaca further lend to this argument. There is a resemblance between Huaca A and the structure seen in the fineline roll out drawing in Figure 4.31 where a presumably elite individual sits atop a huaca holding a goblet. Both Huaca A and this structure have shallow terraces on three sides and an elongated, stepped fourth side. If the east side of Huaca A was composed of a series of steps, rather than two terraces, it would have looked even more similar to this image. Even though there is likely some validity in drawing inferences from Moche art (see Wiersema 2010), I cannot be certain that indeed Huaca A was a place where the Sacrifice Ceremony was performed or was in anyway related to the activities seen in this drawing.

**Figure 4.31: Rollout drawing from a fineline ceramic vessel showing a scene where a goblet of blood is presented to a figure seated atop a huaca-like structure resembling the form of Huaca A. Drawing by Donna McClelland and image courtesy of Christopher B. Donnan**

Huaca A may have also been dedicated to other ceremonies as well, such as those associated with the canal that passes just to the west and south. The marginal location of Licapa II and the need for irrigation agriculture would have made water a very important resource for this site. Also, the fact that the canal runs directly though the site, suggests that it played an important role in the everyday life. It is possible that rituals associated with this canal were performed at Huaca A when it was the only major structure on the site.

If ceremonies of any kind were actually performed on this Huaca A, there would have been an associated public place or plaza for their viewing. Both Huaca Cao Viejo and Huaca de la Luna have plaza areas to the north so this was the first place I examined when searching for Huaca A's associated plaza. Unfortunately, because of past agricultural activity and severe looting no plaza or public area was found in association with any side of Huaca A, let alone the north. This made it difficult to understand its intended orientation. However the terracing/ stepping on the east side may indicate that activities associated with the huaca took place to its east. This is also suggested by the position of the figures in the iconography of Figure 4.31. Prisoners carry litters in front of the elongated side of the huaca seen in the art. Facing west would have allowed the spectator of these ceremonies to see not only Huaca A and the ceremonies, but also the canal and the imposing Cerro Azul. The relationship of these features may have held some religious significance to Huaca A's placement and will be further addressed in Chapter 7.

## Huaca B

### Huaca B Construction and Form

Three hundred meters to the south-southeast of Huaca A stands Huaca B. Huaca B is a large 80 m x 66 m, low (6-7 m high) structure that appears to have consisted of a series of rooms and chambers at different levels that were remodeled numerous times.

Attached to the immediate north of Huaca B is an elevated platform with a series of rooms or patios measuring approximately 65 m north south x 50 m east west. An adobe wall lines the western side of the platform (Figure 4.32). No walls were found on the northern or eastern side. Unit 5 was placed over the hypothesized entrance to Huaca B in order to better understand the construction sequence and methods employed in the construction of the huaca. We placed Unit 4 over the west wall of the elevated platform to better understand how it related to Huaca B (Figure 4.32).

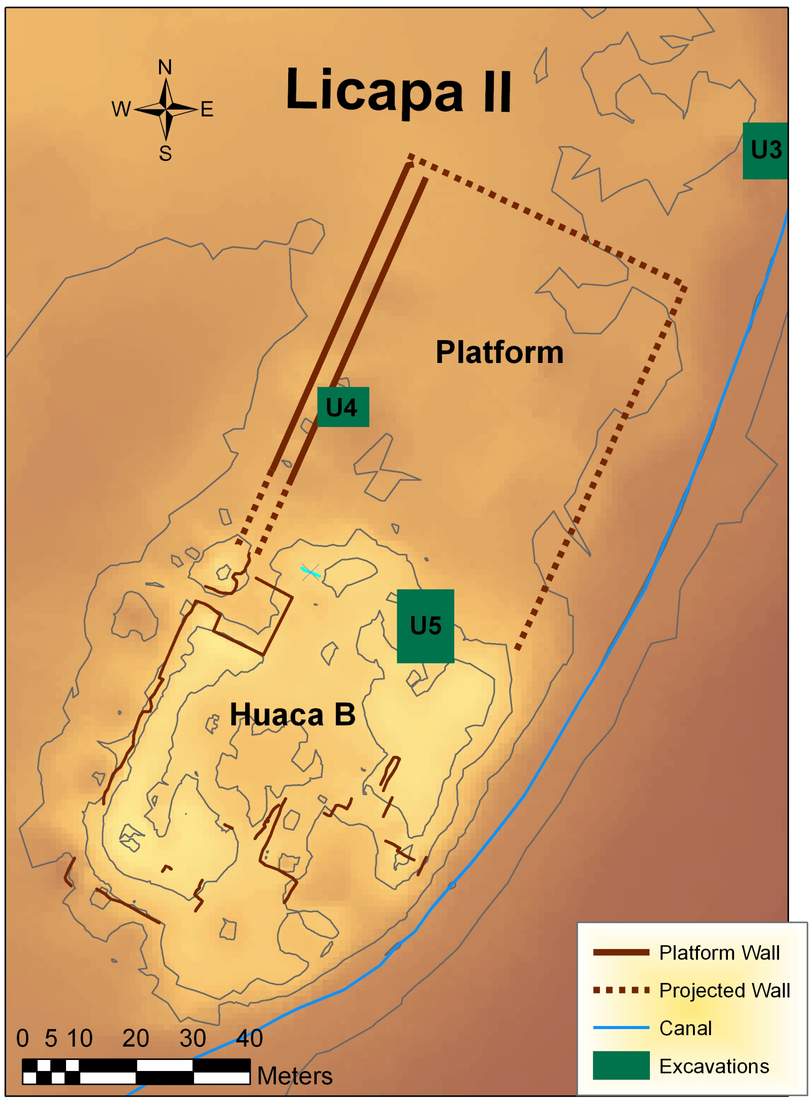


**Figure 4.32: Huaca B showing the huaca, platform, excavation units and the adobe wall lining the west side of the platform.**

*Unit 5*

Unit 5 consisted of a trench measuring 14 meters north south by 10 meters east west located over the northeast corner of Huaca B (Figure 4.32 and Figure 4.33). The objective of this excavation was to identify and define the access to Huaca B, since surface architecture and topography suggested that there could have been a ramp in this location. Some walls were also visible on the surface prior to excavation. Because of the visible walls, I hypothesized that this area may also elucidate the construction techniques employed and some of the different phases of construction of this building. The excavation of Unit 5 consisted of clearing the rubble, sand, and fill from the façade to expose the penultimate and ultimate phases of construction.


**Figure 4.33: Unit 5, facing south.**

Even though excavation of Unit 5 only exposed the last two and potentially three levels of occupation, from this excavation I could tell that this huaca had been subjected to multiple remodeling events. During the excavation we revealed the main access ramp into the structure. Two visible phases of this ramp were apparent (Figure 4.33, Figure 4.34, and Figure 4.35). The ramp had originally extended at the same angle as the architecture on the rest of the site, 24 degrees east of north, and directly onto the lower platform in front of the huaca. At some point it appears as though there was a traumatic event, most likely an earthquake or possibly El Niño rains, and the western wall of the ramp began to collapse. A second wall was added to shore up the collapse and narrow the ramp. The access into the building was also blocked by a wall and changed so that the ramp turned to the east. There is also evidence for water runoff on the ramp next to the added wall, which may have been related to rains during or after its addition.


**Figure 4.34: Ramp in unit 5 facing north. This photo shows the remodeling of the ramp and the reinforcement of the ramp wall. It also shows chambers 2, 3 and 6.**

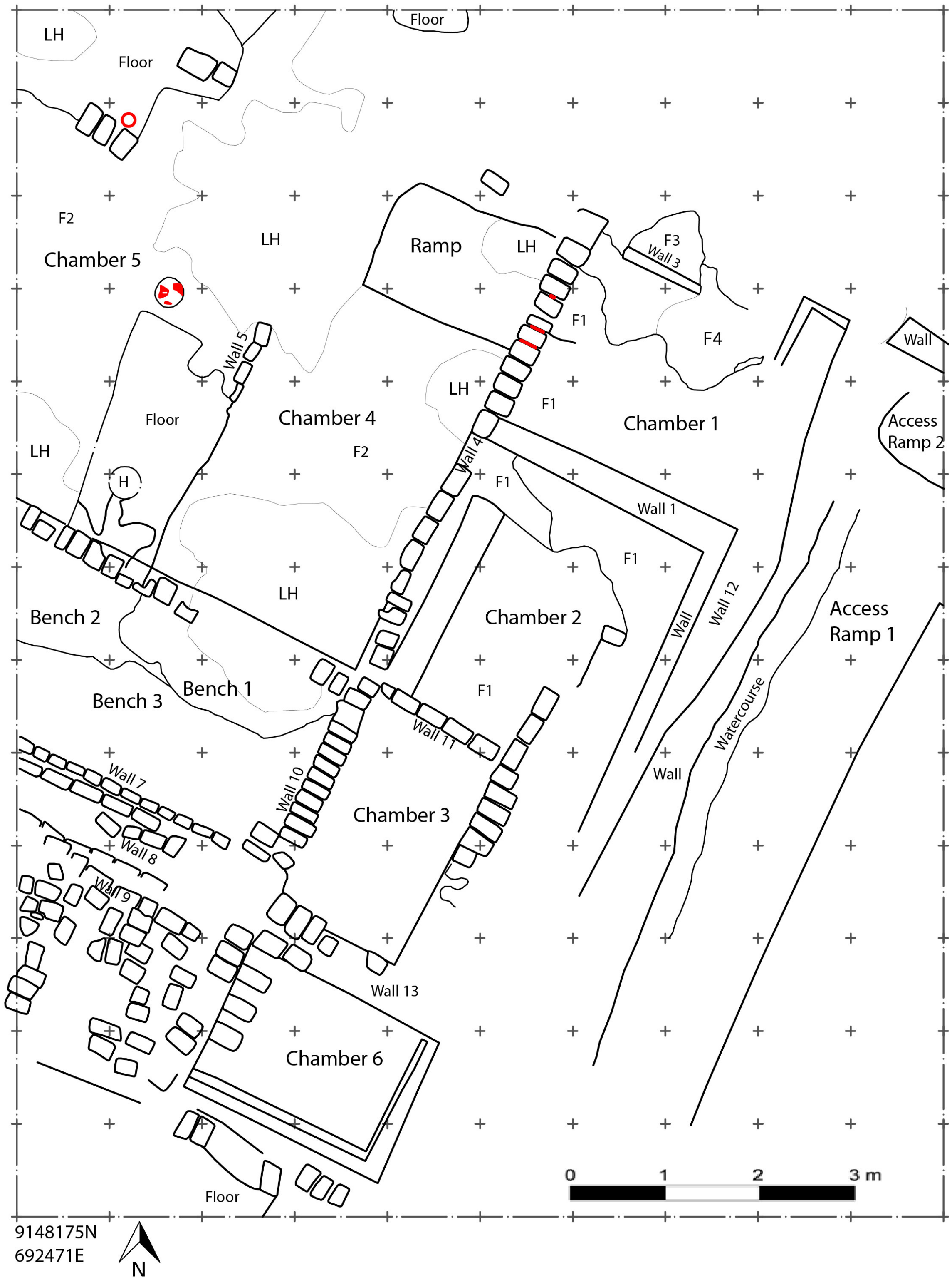


**Figure 4.35: Plan view drawing of Unit 5.**

Evidence of an earthquake can also be seen in Chamber 6 (Figure 4.35 for location). Two floors were uncovered in Chamber 6 and were associated with the phase of the ramp that extended to the north. The chamber was later closed when the ramp was narrowed. The lower floor was associated with plastered chamber walls on the north, south and west sides. This lower floor was cracked and displaced, which likely corresponds to an earthquake (Figure 4.36). After the floor was destroyed, the room received an additional face of adobes on the north, south, and east sides (which had previously been open to the ramp) and a new floor about 10 cm above the previous floor (Figure 4.37). At some point after this remodeling the room was filled with sterile yellow sand.


**Figure 4.36: Displaced floor in Chamber 6, Unit 5.**


**Figure 4.37: Chamber 6, cracked and displaced floor is below the sand seen in the center of the photo. The renovation and addition of a new floor is seen above this cut.**

Clear evidence for this earthquake or event is not seen elsewhere in the unit, or on the site for that matter. However, the architecture of Huaca B was remodeled various times. The presence of five other chambers, all eventually filled with clean sand, and four separate floors indicates multiple phases of rebuilding (Figure 4.35, Figure 4.38 and Figure 4.39). Excavating further into this huaca would probably reveal that there were even more episodes of remodeling.

In the excavation we encountered a total of six chambers (Figure 4.35, Figure 4.39), all of which were filled with sand with a layer of rubble on top. A ramp led from Chamber 4 up to Chamber 1. The walls and floors within the chambers demonstrate that there was a complex history of renovation (Figure 4.39). An elevated floor with a circular cut, possibly from a posthole, separated Chambers 4 and 5. However, these chambers were likely one room at one time. It is unclear if the elevated fragmented floor spanned the entire unit at some point and is just severely damaged now. In Chamber 3 we found a wool textile bundle with bones inside as well as a double spout and bridge vessel with central coast characteristics (Figure 4.40). It is unclear if these two objects were related. However, this vessel form and wool were both uncommon at the site. In general, the area was quite destroyed from a mixture of looting and exposure after abandonment.


**Figure 4.38: Chambers in Unit 5.**

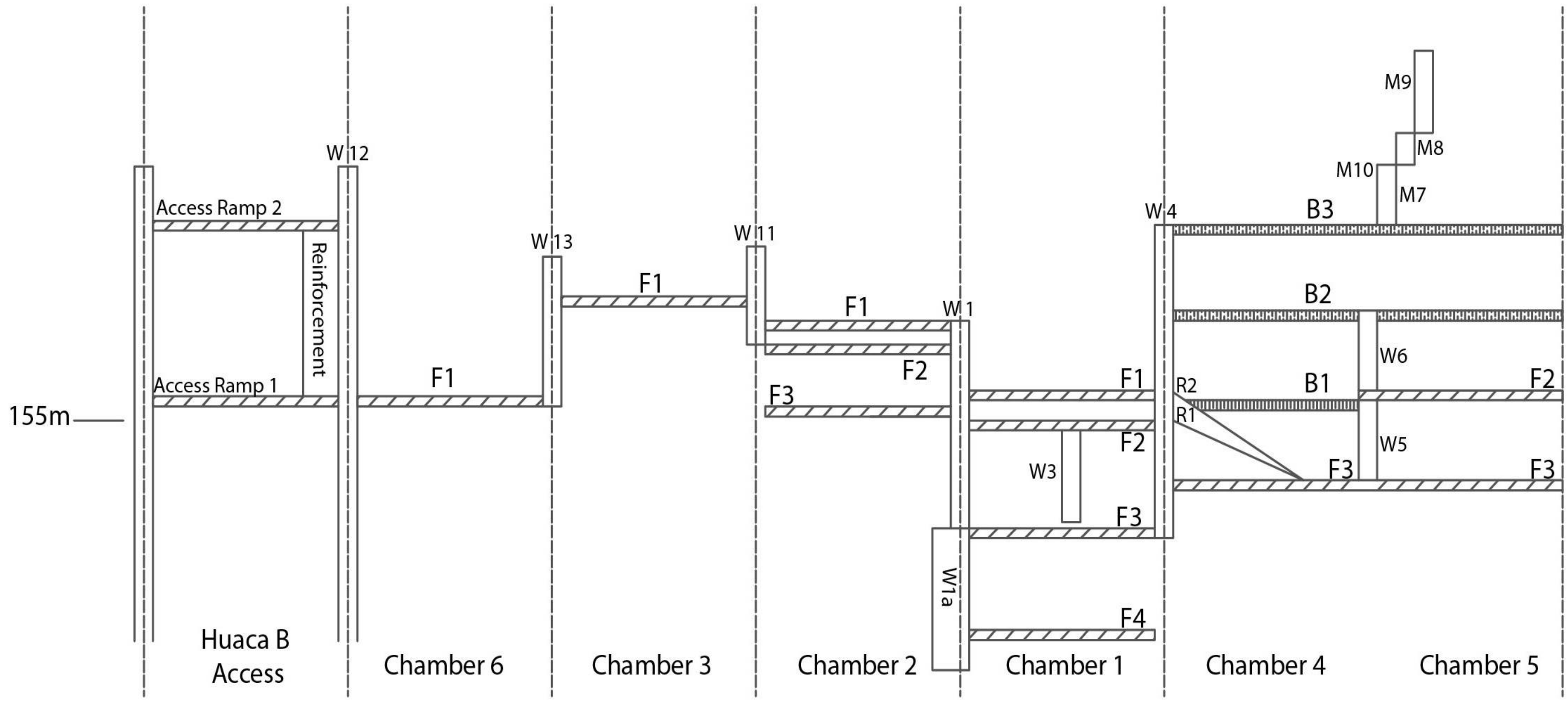


Figure 4.39: Schematic drawing of levels of chambers and floors in Unit 5.


**Figure 4.40: Double spout and bridge ceramic found in Chamber 3, Unit 5.**

Based on the excavation of Unit 5 I was able to determine that Huaca B has a very different plan from that of Huaca A. Huaca B was composed of multiple rooms and chambers and was accessible by a ramp on the eastern part of the structure. Based on there different forms, I hypothesized that the activities associated with the huacas were quite different. The excavation of Unit 4 helped to define some of the activities performed in this part of the site.

*Unit 4: Huaca B Platform*

Unit 4 was located on the elevated platform and directly to the east of the western perimeter wall to define the architecture inside the platform wall, define the function of the space, and define the sequence of the occupation (Figure 4.32). The unit measured 9 meters east-west by 7 meters north-south. The only visible architecture on the surface was the roughly north south running wall (24 degrees east of north), labeled Wall 1, and an east west running wall (Wall 5) that was hypothesized to be a partition or a room division since Wall 1 continued to the north (Figure 4.41).


**Figure 4.41: Unit 4 on the Huaca B platform facing west. This photograph shows floors 5 and 5B, labeled as F5 and F5B. It also shows walls 1,2,3, and 5, a row of aligned paicas and a collapsed wall.**

It appears as though this platform contained a series of spaces that were remodeled various times. In the excavation we found a series of four superimposed floors (floors 5, 5B, 5C and 7 [*apisonado*, or trampled earth]). Floors 5 and 5B were very well prepared and few artifacts were found on top of them, indicating the floors were kept relatively clean while in use (Figure 4.41). The fill between floor 5 and 5B contained many examples of fine Moche IV and V ceramics. They included *floreros*, stirrup-spout bottles, and other decorated wares, possibly indicating that these wares were used in or near this space and then were incorporated into the layer of fill between floor resurfacing. It is also possible that the materials found between the floors were discarded in place and the new surface (floor 5) was constructed after the layer of debris over 5B became too dense. A piece of charcoal from the fill dates to A.D. 690-880. It appears as though floor 5B was used for either a longer period of time or more intensely than floor 5 since it was not in as good condition and there were a number of places where it was broken. A sample of charcoal from the surface of floor 5B dated to A.D. 590-760.

Other evidence that this part of the site was used for civic activities includes four *paicas,* or large storage containers, found to the north of east-west running wall, Wall 5 (Figure 4.41). These *paicas* were potentially in use before the construction of Wall 5 and were obviously used for the storage or serving of *chica.* Their presence demonstrates a pattern that would not typically be found in a standard Moche household setting, but could be associated with patio space used for larger scale food preparation (van Gijseghem 2001). Directly to the south of the *paicas* was a large burned area, likely corresponding to a large adobe-lined oven or hearth. This hearth predates the construction of Wall 5 and is also below the level of the *paicas* on the other side of Wall 5. Although these *paicas* were not as deep as the hearth, the fact that they were incorporated into a stand or some type of platform could indicate that the *paicas* were located on a higher platform that was constructed at the same time as the hearth, but that does not seem likely. In either case, this part of the site appears to have been used for large-scale preparation of food prior to and after the construction of Wall 5.

Following what we know about the Moche and from other Andean sites, the preparation, presentation and consumption of food in public spaces would have been an important activity for the elites either residing in or near Huaca B or using it for civic purposes. The fact that the floor surfaces were kept very clean after use is consistent with pattern seen at other Andean sites with a civic-ceremonial function, such as the Nasca site of Cahuachi (Silverman 1993).

*The Chamber*

Floor 5B was cut to create a large, adobe plaster-lined chamber (Figure 4.42). The chamber measured 5.45 m north south x 2.25 m east west at is widest and was oriented with the architecture at the site. The beams over the northern half running were oriented north-south and the beams over the southern half were oriented east-west. A row of adobes on the bottom of the chamber also partitioned it into two halves. On top of the beams sat large rocks measuring up to 20 cm in diameter (Figure 4.43 and Figure 4.44). The chamber was filled with consolidated hard-packed sediments, but was otherwise devoid of cultural materials except for a few ceramic sherds found inside.  It was unclear as to whether or not the chamber was deliberately filled with the sediments, or if they were washed in during an El Niño or other event associated with large amounts of water, as I will discuss below.

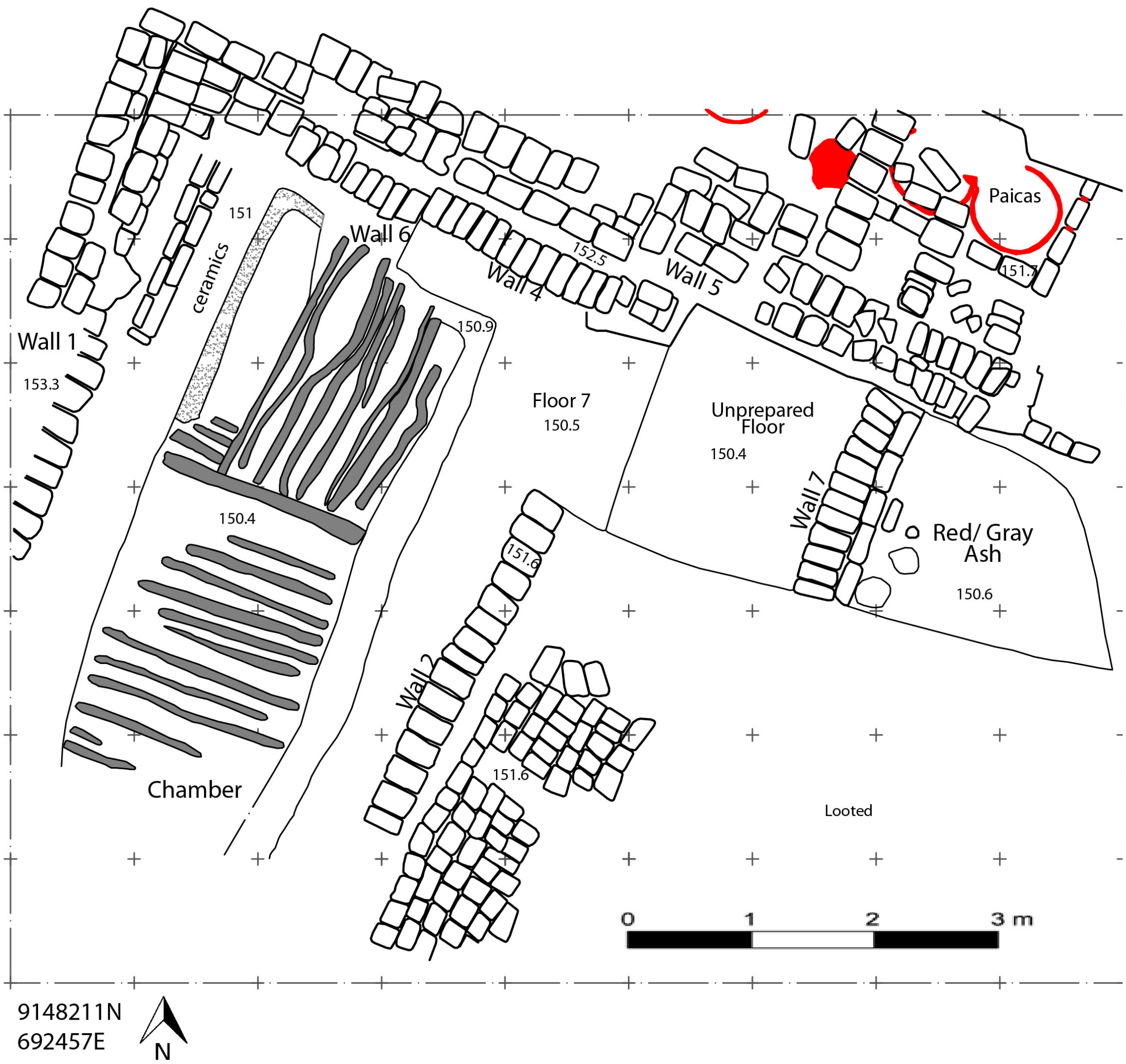


**Figure 4.42: Plan view drawing of chamber in Unit 4. The walls are also labeled and heights are given.**

**Figure 4.43: Rocks on top of the beams that were on top of the chamber in Unit 4.**

**Figure 4.44: Photograph of the beams on top of the chamber in Unit 4.**

The fact that it was devoid of cultural materials makes its purpose hard to determine, but it does share some characteristics with Moche chamber tombs. Like other known Moche tombs, large wooden beams and rocks were placed above the chamber. However, the chamber in Unit 4 it is proportionally different from other known Moche chamber tombs in that it is long and thin (Millaire 2002; Mujica 2007; Castillo 2011). It is also not uncharacteristic for Moche tombs to be empty. Empty tombs have been found at many Moche sites, including El Brujo and Huacas Moche (Millaire 2002). Curiously and potentially similar in nature, one of the tombs at Huaca Cao Viejo, Tomb 1A (G243) was reopened during a period of heavy rains (Franco Jordán et al 1998b, 1999b; Millaire 2002:72). The original occupant was an elderly female who was moved. The tomb was then remodeled and another elderly individual was interred. Also at Huaca Cao, a double chamber tomb associated with Building 3 and containing Moche IV ceramics, was reentered some time after the original burial and the individual was removed. This empty tomb was resealed with wood beams and rocks, much like the chamber of Unit 4 (Figure 4.45).

**Figure 4.45: Rocks and beams above a chamber tomb at Huaca Cao Viejo (Galvez et al. 2003:90).**

One can only speculate on the function of the chamber in Unit 4 since no concrete evidence of re-entry was present. It could have been used at one time for storage of goods related to the civic activities performed at the site. Likewise, it could have been reserved as a tomb for a body that was moved in antiquity, or perhaps, it was never utilized in the first place. There was a wall directly above the chamber (Wall 6) suggesting that it was not prepared to receive a body and had already served its final purpose when the site was abandoned.

Another possibility is that this chamber was part of the construction of the Huaca B platform. Shimada notes that chambers covered with *algarrobo* beams were used in the construction of the Main Body of Huaca Forteleza at Pampa Grande. He states that beams were part of the chamber and fill technique employed at the site (Shimada 1994: 162). For the case of the mounds at Sicán, (Cavallaro and Shimada 1988) note that logs overlaid filled chambers on the periphery of the mounds. They contend that the logs, after they were covered with adobes, cane, and rocks, would have provided protection of the foundation from occasional downpours (Kroeber 1930:61, 94). It remains unclear if the sediments in the chamber were all from the flooding event, or if they could have been deliberately put there prior to the event. Therefore, there is the possibility that this chamber was never used and was just one of the construction techniques employed in making the platform.

*Evidence for El Niño at Licapa II*

In addition to the hard consolidated sediments within the chamber, above the cut in floor 5B and directly above the chamber there was evidence for flowing and standing liquid in the form of hard laminated sediments. These sediments made it difficult to determine if the surface of floor 5 once existed here. On top of the chamber sat Wall 3, which was very water damaged. Directly below Wall 3 we found the remains of another lower wall (Wall 6) and an associated "bench." Wall 6 was constructed before the main platform wall and on the first floor in this area, floor 7. Wall 6 was cut into and partially dismantled to place the chamber. The "bench" associated with the Wall 6 paralleled Wall 4 to the north and turned south and followed along Wall 1. The bench was constructed of two courses of adobes and was covered with large fragments of ceramics (Figure 4.46). Ritual ceramic killing is a feature of many old and New World cultures and is seen throughout the Andes, and especially with the Wari (Jennings et al. 2010). It is possible that these ceramics related to some kind of ritual act associated with the chamber. Similarly, the massive amounts of water in this area could have been associated with some sort of a closing ritual. As mentioned in the discussion on Huaca A, episodes of liquid poured over a surface or feature were a way of closing or sealing an area. It is also possible, and probably more likely, that the noted water damage could have been related to a large El Niño event where water and sediment were pushed over a distance and accumulated between Walls 1 and 2 where it was unable to drain, possibly because of the chamber below.

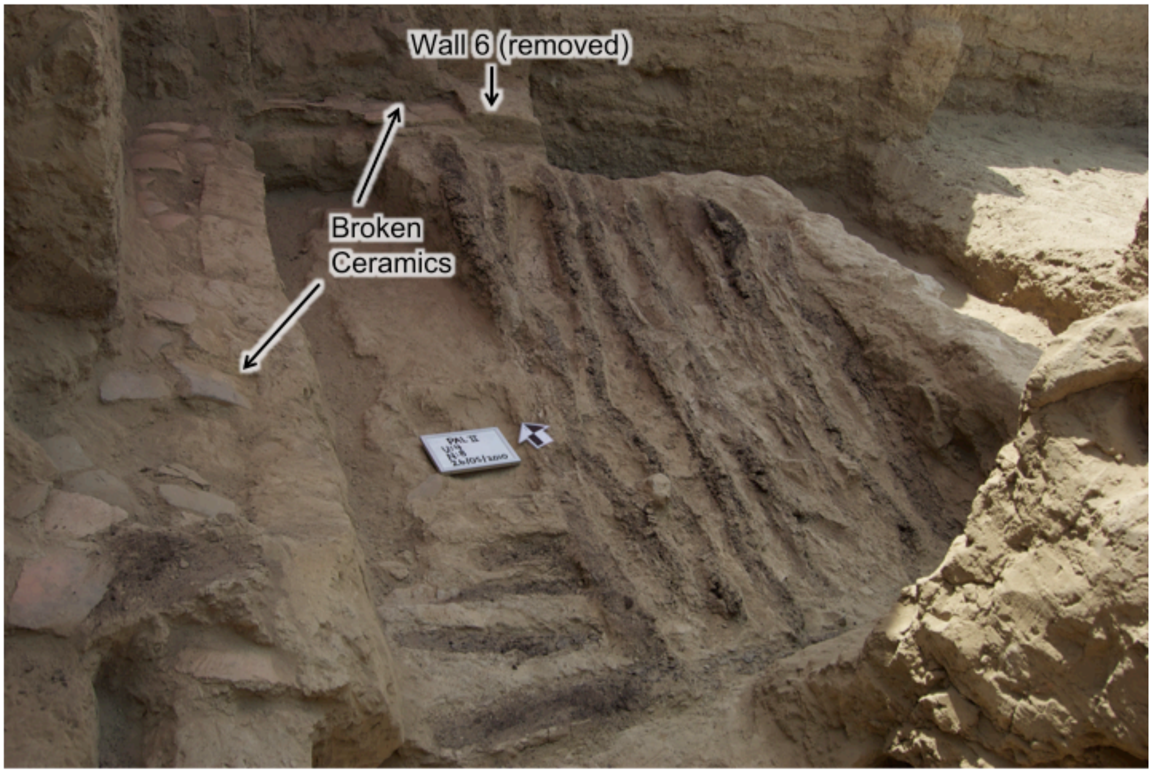


**Figure 4.46: Photograph showing removed Wall 6 and the "bench" with broken ceramics above the chamber.**

Other possible evidence that suggests that these sediments were related to an El Niño event comes from collapsed walls in Unit 4. The southern part of Wall 2 appears to have once been a tall single course adobe wall (see Figure 4.41, Figure 4.42 and Figure 4.47). Evidence for water-laid laminate sediments just below the level of the wall and on top of floor 5 suggests that this wall may have collapsed eastward during an episode of heavy rain or from a flood. This event may have occurred right around the time this area was abandoned since there is no architecture above this level.

The fluvial sediments are not just found below this collapsed wall. In fact they slope from west to east from above wall 1 and terminate just beyond Wall 2 and under the collapsed adobes from this wall. The rushing water could have destabilized the wall causing it to collapse. The fact that the wall fell while the sediments were still wet, thus leaving their impressions in the mud, attests to this hypothesis (Figure 4.48).

It is also possible that the collapsed wall was actually not a wall, but rather a deliberately placed adobe platform floor. However, the laminations above floor 5 and below the adobes suggest that the placement occurred when the mud on floor 5 was still wet. Furthermore, the collapsed and slumping adobes seen in Figure 4.49 on Wall 1 also appear to have fallen after sediment and water rushed into the area since they sit above the sloping water-laid sediments. Within the matrix of laminated sediments below this collapse and above the chamber, some adobes were barely recognizable since they had partially dissolved into the surrounding silty clay. Others were jumbled and against the wall and a row was plastered to a lower section of Wall 1 in an almost gravity defying position (Figure 4.50 and Figure 4.51). The position of these adobes suggests they were dislodged from the wall and moved by the water and sediment load.

**Figure 4.47: Collapsed Wall 2 in Unit 4.**

**Figure 4.48: Adobes from Wall 2, Unit 4 fell when the sediments below them were still wet and left impressions in the mud.**

**Figure 4.49: Collapsed adobes on top of water-laid sediments against Wall 1, Unit 4.**

**Figure 4.50: Water-laid sediments against Wall 1, Unit 4. Jumbled adobes are seen in the matrix of the fluvial sediments.**

**Figure 4.51: Adobes "hanging" from Wall 1, Unit 4 because they are plastered to the wall by mud from the sediment flow into the unit. Photo facing west.**

The evidence presented above is suggestive of flooding related to an El Niño event. The sediments that were washed into the area could have originated from the top of Huaca B, or as far away as Cerro Azul, depending on the path the water took. Arroyos are seen in the satellite imagery of the skirt of Cerro Azul and one of these could have brought the sediments as far as the site. What remains unclear, however, is if this happened post-abandonment or at the very end of the use of the site and was a contributing factor to the abandonment. No architecture or evidence for occupation is above the water-laid sediment layer in Unit 4. Moreover, the sediments are in contact with floor 5, suggesting that floor 5 had been exposed when the flooding occurred. If this were the case, then the flooding event could have contributed to the abandonment of the site. A radiocarbon date from between floors 5B and 5 dated to A.D. 690-880. Therefore, the flooding of this area had to have occurred after this time. I also note earlier that floor 5B was in poorer condition that floor 5, suggesting that 5B was in use longer. However, it is also possible that floor 5 was abandoned not long after its construction.

Evidence for an El Niño event is not seen as clearly in any of the other units. However, evidence for water runoff is seen on the ramp in Unit 5, which could have occurred during the same event. There is a great deal of evidence for erosion caused by rain on Huaca A, but the timing of these events remains unclear.

Huaca B Materials, Bricks and Chronology

Materials recovered from the platform and from Huaca B itself, mainly ceramics, were very different from the orangey paste and cream slip ceramics that overwhelmingly characterized Huaca A. Although very few fineline ceramics were encountered in the excavation on the huaca, the ones recovered were all figurative Moche IV and possibly V, and Late Moche San José de Moro style. There was also a style of ceramics found just on Huaca B that looks like an imitation of San José de Moro fineline, but seems to be unique to the site. No examples of geometric Moche V were found on Huaca B.

Ceramic patterns on the platform to the north of the Huaca were quite different. There were many examples of fineline Moche IV and V, both geometric and figurative. Again, no orange paste ceramics were found on the platform. A great number of *paicas* and jars were also found on the platform, further suggesting that the role of this space included feasting and consumption. Ceramic styles and distributions will be discussed in more detail in the following chapter.

Two sizes of bricks are found on Huaca B. The early phases were made with bricks similar to the smaller bricks used on Huaca A. These averaged about 32 x 22 x 13 cm. The final phase of construction on Huaca B was composed of smaller rectangular bricks with an average size of about 25 x 16 x 12 cm. In most brick chronologies, smaller bricks tend to be related to earlier construction phases (Galvez et al. 2003), however this is not the case at Licapa II and will be further explored in Chapter 7.

<u>Huaca B Implications</u>

Huaca B and its platform are very different in form Huaca A. Its divided and exclusive spaces attest to a less inclusive setting than that of Huaca A. The platform to the north of the Huaca was an extension of the huaca itself and may have been more public in nature. The spaces encountered in the excavation were not residential in nature; rather they were likely used for some ceremonial or civic function. No evidence for households, either elite or commoner was encountered. On the contrary, activities such as the preparation and consumption of food and drink for large-scale ceremonies or events appear to have occurred on the platform. This platform may also have been reserved for burials of specific individuals. The fact that the chamber in Unit 4 was empty could signify that the intended occupant was actually buried somewhere else for any number of reasons, which is not uncommon. There is substantial evidence for the removal and transport of bodies from Moche tombs within and between sites (Franco et al. 2003; Castillo 2011). These actions can possibly help explain relationships between sites. Because it was devoid of cultural materials, unfortunately we will never know if the chamber was built as a tomb or served some other more mundane function.

Radiocarbon dates from this sector demonstrate that Huaca B was built after Huaca A and sometime after 650 AD. However, it is possible that earlier stages of Huaca B were not uncovered. Even still, activities continued in this sector of the site well after they ceased at Huaca A. The activities and functions associated with Huaca B (feasting, food preparation on the platform, and exclusive spaces possibly reserved for intimate functions or elite residences on the interior) were quite different from those that were associated with Huaca A (highly visible events potentially relating to worship and sacrifice). The fact that Huaca A and Huaca B were not built at the same time, accompanied by a significant difference in the form and activities performed at the huacas, as well as a change in the ceramic assemblage suggests that great cultural and/or political changes occurred between their constructions. These changes will be explored further in the following chapters.

## The Residential Area Between the Huacas

<u>Domestic Space at Licapa II</u>

Excavations on Huaca A and Huaca B were instrumental for understanding public and ceremonial life at Licapa II. The excavation of Unit 3, located between the huacas, showed that this site was not exclusively reserved for worship and feasting and that people lived here and engaged in domestic responsibilities.

*Unit 3*

Unit 3 was a 10 x 10 meter trench placed between the two main huacas and over a portion of the canal that runs through the site (Figure 4.3). The goals of this excavation were to determine if the canal was associated with the Moche occupation of the site and to understand if there was a residential area between the two huacas. This area was particularly difficult to excavate because of the number of looter's holes (Figure 4.52). Nonetheless, we uncovered an adobe platform-like structure with at least five levels of residential occupation below. The platform abutted the canal, which was likely in use at the same time as the platform, since a continuous plastered floor-like surface extends from the canal up to the eastern most wall of the platform (Figure 4.53 and Figure 4.54). This canal could have also have been in use in earlier phases since this eastern wall appears to have been reused and incorporated into the later platform and the base of the canal was below the level of the base of the original wall.

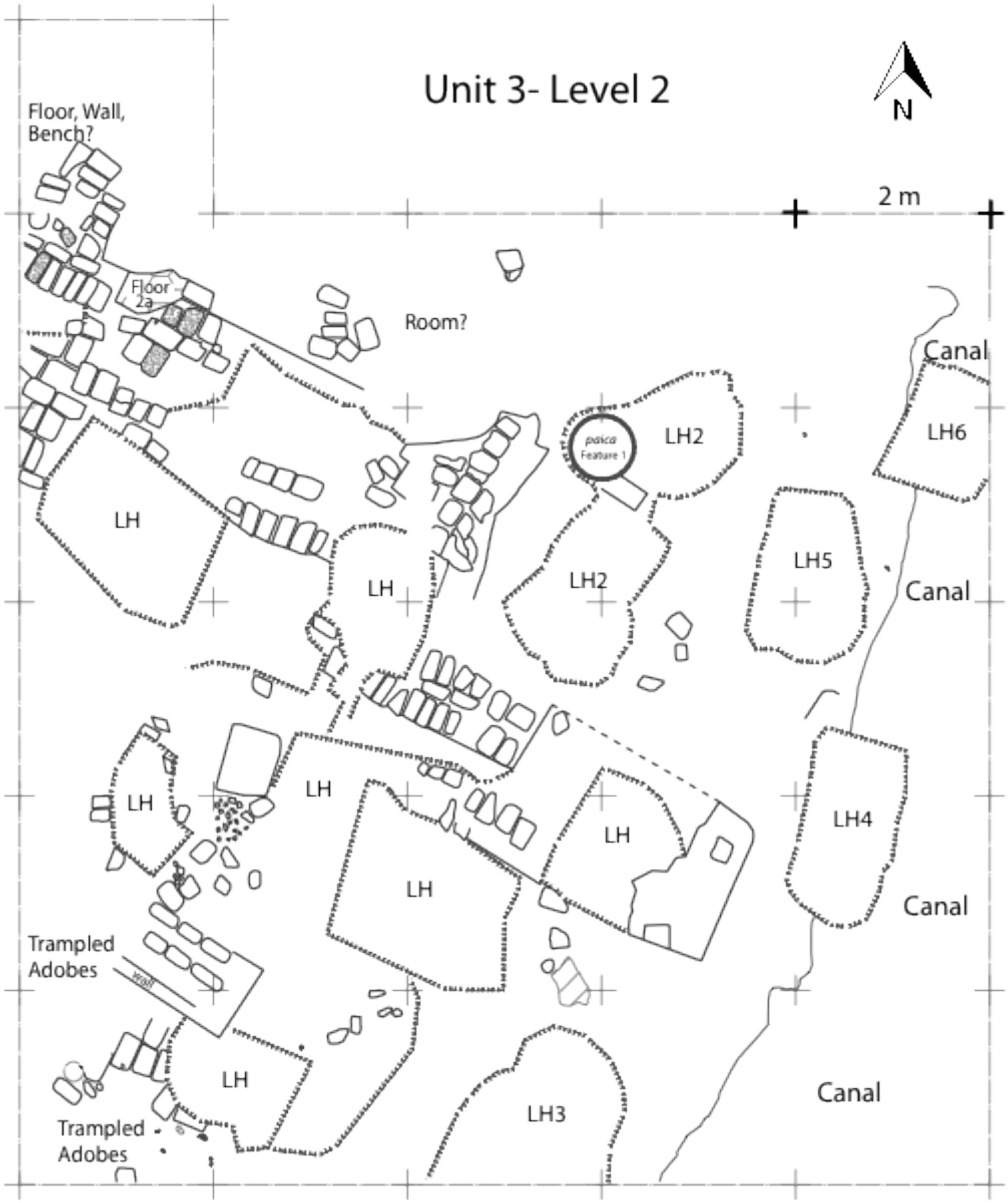


**Figure 4.52: Plan view of Level 2, Unit 3. LH stands for "Looter's Hole." There were numerous looter's holes in this unit, but we still encountered significant intact contexts.**

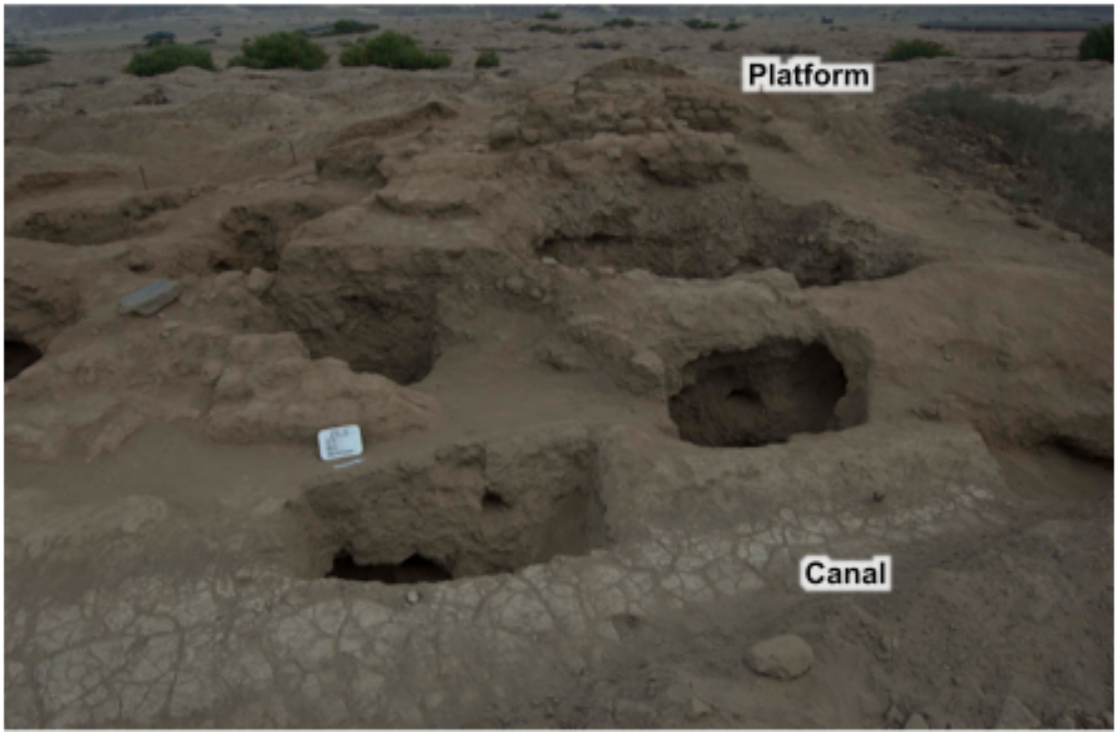


**Figure 4.53: Unit 3 facing west. The canal (prior to excavation) is seen in the foreground and the adobe platform is seen behind the canal.**

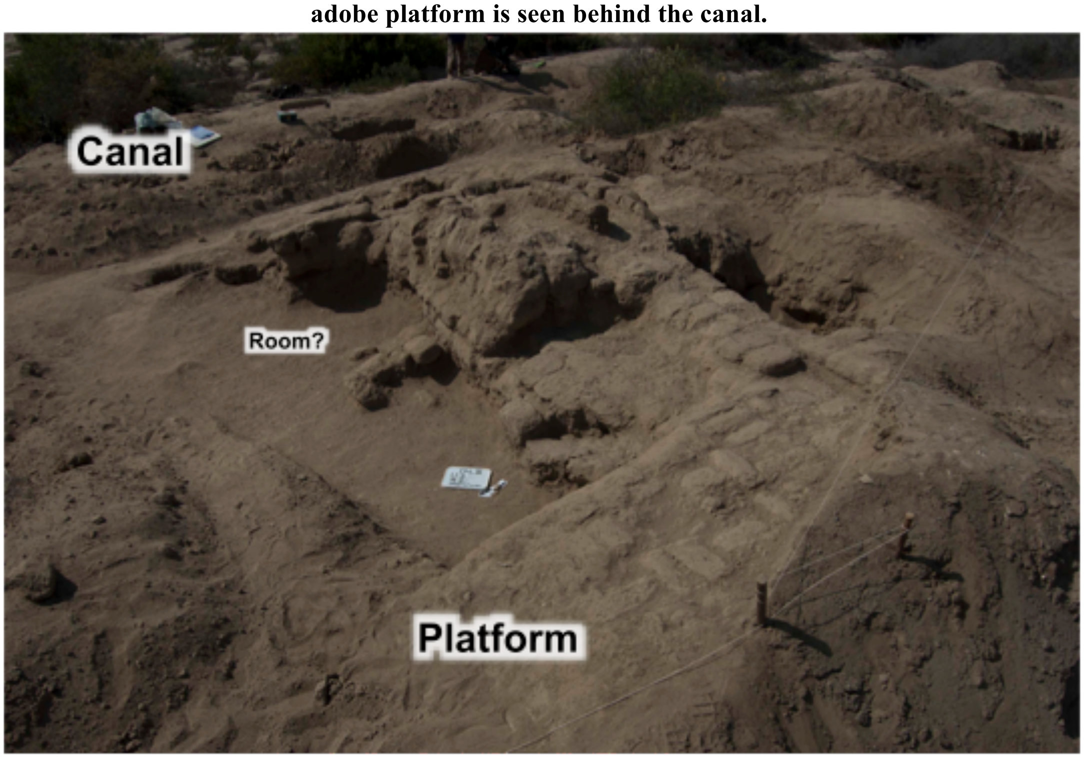


**Figure 4.54: Unit 3 facing east. The platform with a potential room is in the foreground and the canal is in the background.**

The platform consisted of an adobe surface in the southern portion of the unit. This surface covered most of the southern part of the excavation unit and was only one course of adobes thick. The surface stepped up to the tallest part of the platform located in the middle of the unit where two, east west running, parallel walls were filled in with rubble and topped with 2 additional courses of adobes. A third level of adobes sat on top of the two courses in places and consisted of two parallel rows of adobes standing on their long sides. To the north of the tallest part of the structure was what may have been a room (Figure 4.52 and Figure 4.54). The west half of the room was delineated by a wide wall, bench, or floor surface. Unfortunately, we did not continue the excavation west and were only able to expose one meter of this feature so its full extent remains unknown. The wall on the east side of the room was broken by a looter's hole but enough remained to follow the outline of the room. The remains of a plastered floor could be seen against the walls inside the room, but a looter's hole destroyed the surface itself. Due to time constraints, we were not able to excavate farther to the north to locate the north wall of the room. The highest part of the platform and the room were left intact and excavation continued below the adobe surface to the south.

Prior to the construction of the platform, the area below the tallest part was a small, narrow room or passageway with 50 cm thick walls. The northern wall of this room did not extend all the way to the east suggesting that the entrance to this room was in the northeast corner. Since we did not dismantle the upper part of the platform to excavate the room, I do not know the exact function of the small room. The western wall of the room was below the later adobe platform, but it was located in the profile when we excavated directly to the south (Figure 4.55).

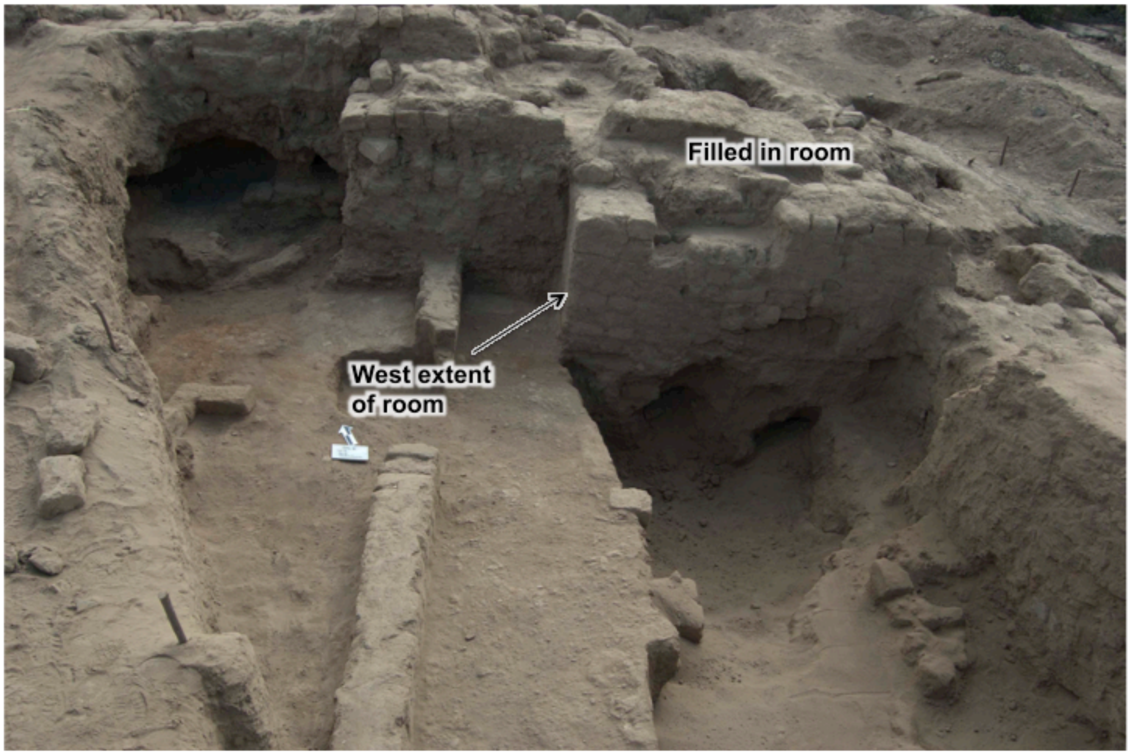


**Figure 4.55: Upper part of the platform and small filled in room. Photo is facing north.**

Below the adobe surface in the southern half of the unit we found evidence for five clear occupation surfaces, indicating that this area was used for residential purposes prior to the construction of the platform. At least one, but potentially two rooms marked the last of these occupations, the larger one containing a square shaped hearth (Figure 4.56). Charcoal from this hearth dated to A.D. 690-950. Only the eastern most wall of this room was uncovered and it was at the same angle as the rest of the architecture at the site, 24 degrees east of north. Although the foundation walls remained the same, once the level with the square hearth was removed we found another use surface of this same room characterized by a *cuy* pen with Moche V stirrup spouts imbedded into the *cuy* coprolites and straw matting (Figure 4.57). A seed associated with this surface dates to A.D. 710-970.


**Figure 4.56: Photo facing south of the residential area in Unit 3, Level 3D. In the room in the center of the photo there was a hearth, or fire pit filled with charcoal.**


**Figure 4.57: Close-up view of the matting and Moche V stirrup found inside the cuy pen in Unit 3. Cuy coprolites were also found in the pen and can be seen in the photo.**

The *cuy* coprolites and wall were removed and there was another wall below that was associated with an earlier room to the east (Figure 4.58). Three other levels of residential occupation were found in association with this room. These levels contained hearths, post molds, and vessels, such as *paicas*, dug into the occupation surfaces. There was also a lot of evidence for burning. The first adobe architecture in the area was placed directly on the sand and there was no associated well-made floor. The NSF lab dated wood associated with a vessel in the sand matrix, but below the use surface of this first level to A.D. 440-650. Charcoal from the first use surface was dated to A.D. 610-770.


**Figure 4.58: Unit 4, Level 5C showing a room and evidence for postholes and burned areas probably associated with cooking.**

*Unit 3 Tomb 1*

We encountered an intrusive pit associated with Level 5C and floor 6. This tomb was a 1.2 meters long, 40 cm wide and 50 cm deep intrusive pit oriented north-south. The tomb contained the body of a child, approximately three years of age, extended in the dorsal position and wrapped in a very deteriorated textile. The head was facing south and the feet were to the north.  The cranium was painted red and there were some fragments of poorly preserved textile or vegetal fiber around the head. The face was fragmented. The arms were extended on either side of the body and slightly folded so that the hands rested on the pelvis and the mandible and some ribs were not in anatomical position (Figure 4.59).


**Figure 4.59: Unit 3, Tomb 1.  The tomb was of a child whose head was facing south.  The body was covered in a red substance, probably cinnabar.**

The legs rested on top of some ceramic fragments and there was a thin square copper piece below the pelvis.  Two other square 3-5 cm copper fragments were recovered where the hands were located.  A circular and a square copper piece were also found close to the mouth, a pattern typical of Moche burials (Millaire 2002).  Both metal fragments were corroded, but less than 5 cm in size.

*The Canal*

Based on the evidence available, I hypothesize that two phases of canal use were visible in the excavation. The earliest is associated with the base of the north-south running wall that later created the eastern most wall of the platform. This surface was destroyed with the addition and remodeling of the canal that brought it to the level where the seamless surface runs from the platform wall and into the canal (Figure 4.60 and Figure 4.61). The irregular shape of the canal leads me to believe that the bottom surface of the canal may have corresponded to an earlier phase associated with the base of the wall. Potentially the later addition of the slope was to prevent flooding and was associated with the platform structure.

**Figure 4.60: Canal in Unit 3, facing south. A looter's hole cuts through the canal, but a continuous surface from the base of the wall on the right site of the photo slopes to the west to form the base of the canal.**

**Figure 4.61: View of the canal facing west. The continuous hard-packed surface extends from inside the canal to the wall seen in the middle of the photo. The wall extends below the level of the canal, possibly indicating that the canal was a later addition. However there could have been an earlier canal in this same location that was erased by this later canal. Either way, this canal clearly is associated with some part of the Moche occupation.**

Based on surface topography and exposed architecture, I believe that there are two other platform structures similar to the one encountered in U3 (Figure 4.62). These structures also appear to be in close association with the canal and may have been a part of rituals or ceremonies associated with its use.

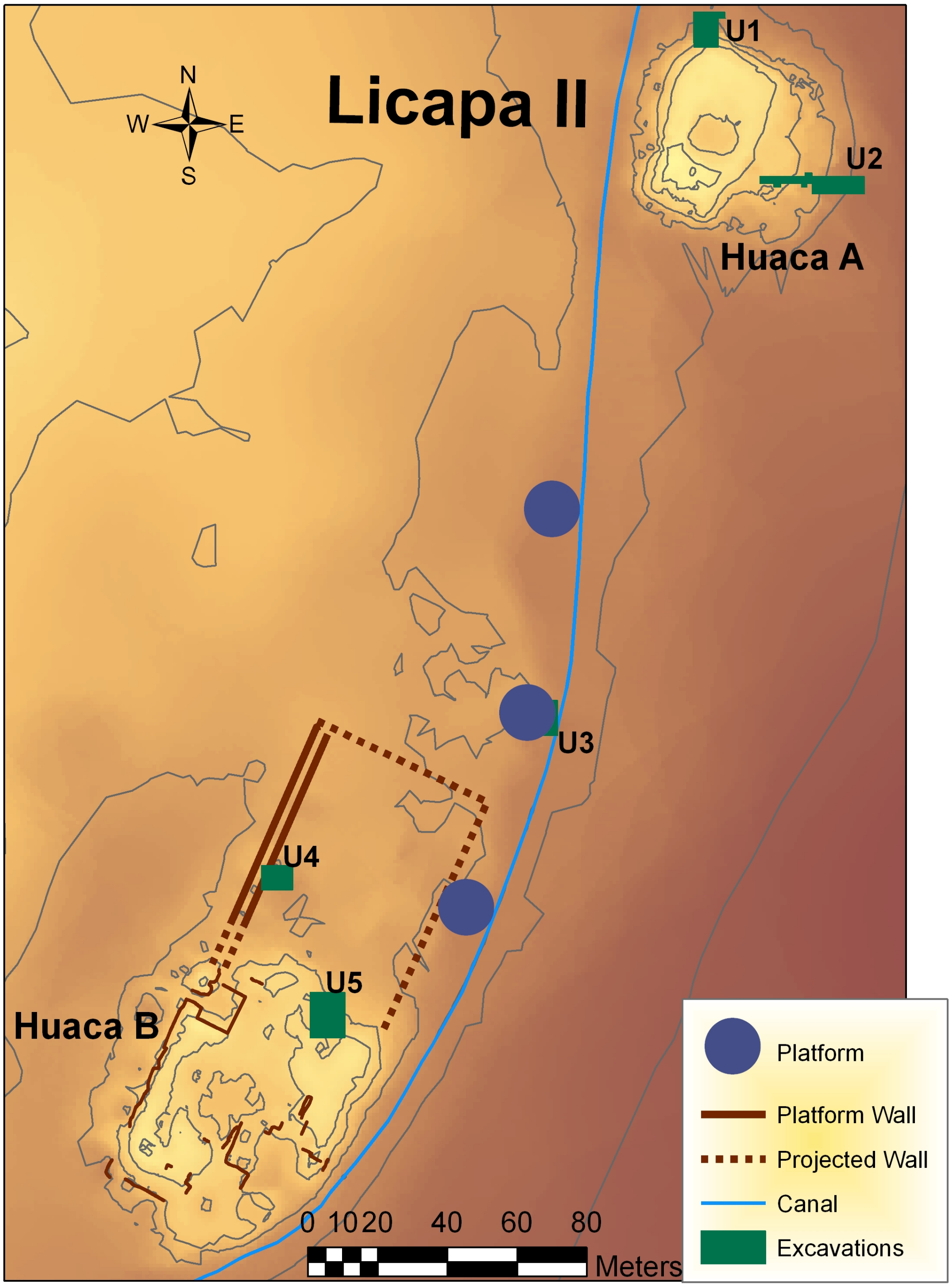


**Figure 4.62: Hypothesized other platforms that were along the canal.**

<u>Residential Area and Platform Materials and Bricks</u>

The five levels of residential occupation followed a pattern that suggested high status use. The ceramics found in this area were of very fine quality and all in Moche IV and V styles. Significantly, Moche IV and V were found together without any stratigraphic or temporal distinction making Licapa II the first site to document their mixed presence. This will be further explored in the following chapters. We also found items of personal adornment, such as combs and pendants, all of very high quality (Figure 4.63). This area of the site appears to have changed in purpose and function over time. After the use of this space for residential needs ceased, it was transformed into monumental space with the construction of the platform. Materials directly associated with the platform were hard to determine since the upper levels of the site were so looted. However, a Paiján projectile point was recovered directly below the platform in the fill, suggesting that the Moche themselves were potentially interested in archaeological matters. Bricks from all construction phases of Unit 3 were the same size as the medium size bricks used at the site. These were on average 32 x 22 x 13 cm.


**Figure 4.63: Bone comb and strombus shell stone pendant found in the excavation of the residential area of Unit 3.**

<u>Implications of the Residential Area Between the Huacas</u>

The site organization at Licapa II is similar to the patterns seen at Huacas de Moche and El Brujo where the area between the huacas was used for domestic and residential purposes. However, I do not know if this space was used as permanent housing, was only temporarily inhabited at certain times of the month or year corresponding with festivals held at the site, or was just used for the staging ground for ceremonies in association with either or both of the huacas. The fine nature of the ceramics found in association with the hearths and *cuy* pen between the huacas suggest that these features were used for the preparation of food for ritual functions and were not just features of the every day houses of the Licapans. However, if people lived in this space permanently, then we can say that the occupants of this area could definitely be considered upper class by Moche standards. They retained this same status through the five occupations in the area and until the platform was built.

The ceramics found in all the occupation levels were a mix of Moche IV and Moche V, demonstrating that there was no temporal difference between these styles at the site and that the entire residential area postdates the construction of Huaca A. No Licapa A style ceramics were found in the excavation of Unit 3 and radiocarbon dates are also later, as will be addressed in Chapter 8. The significance of finding Moche IV and V styles together will be explored more in the following chapter.

The uppermost domestic occupations, if not all of them, were associated with the canal. Late in the history of the site the residential area was transformed into a small-scale platform also in direct association with the canal. This platform, and the other two noted from the topography, are directly associated with the canal. This suggests the continued and possibly increased importance of water rights or ceremonies surrounding water in this marginal zone.

### Geophysical Surveys

To attempt to better understand the extent and nature of the buried architecture at the site, ground-penetrating radar (GPR) and magnetometry surveys were performed to the west of the monumental core (Figure 4.64). This area was chosen because it was flat, free of looter's holes and was hypothesized to potentially have once contained residential structures.

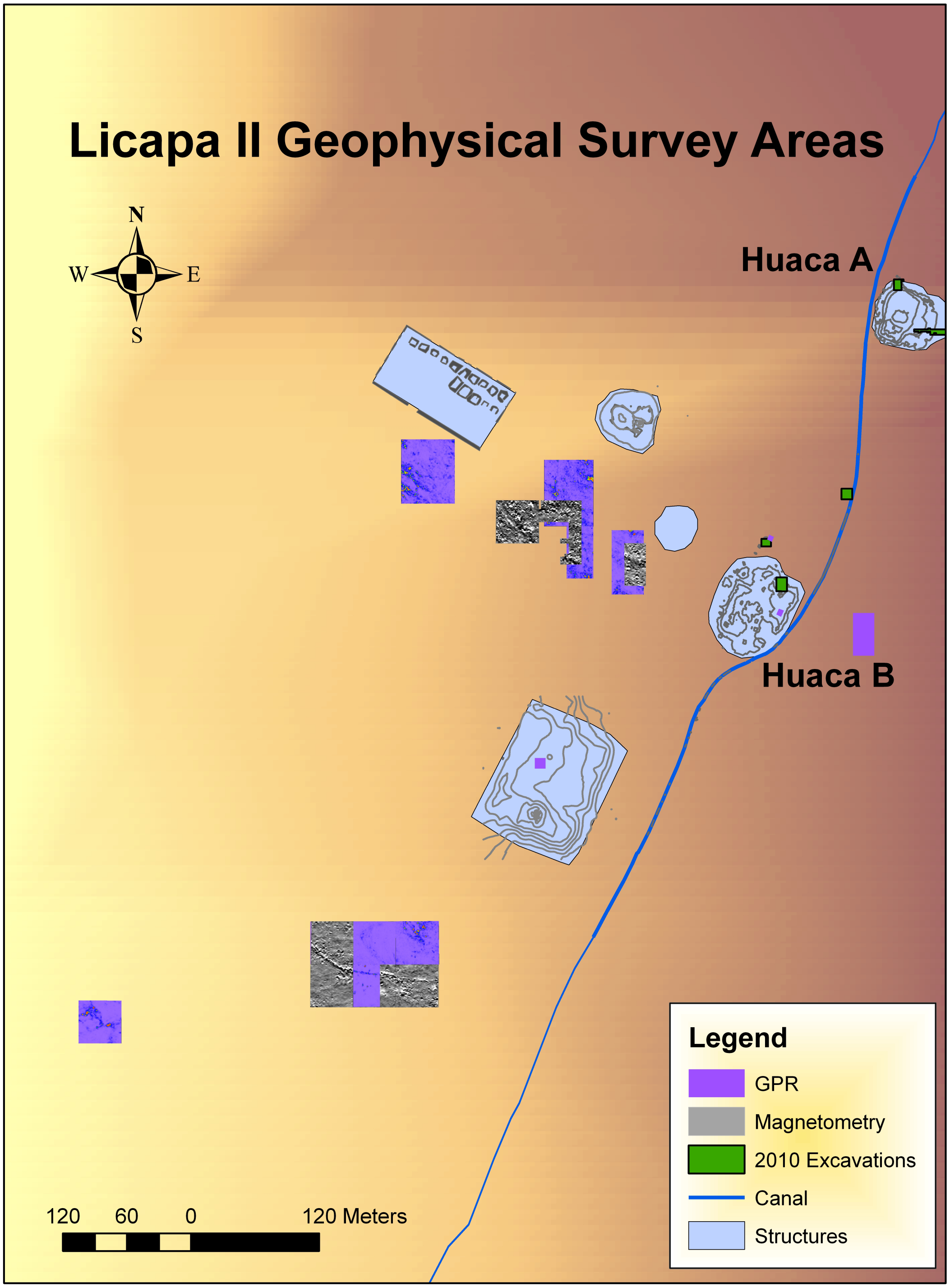


**Figure 4.64: Ground-penetrating radar and magnetometry survey areas.**

Ground-penetrating radar is a geophysical technique that produces accurate subsurface spatial information by reflecting changes in the composition of buried features and the surrounding matrix. GPR is unique because it is the only near-surface geophysical technique that can image in three dimensions, thus giving depth. Radar energy is produced in an antenna, which in its simplest form consists of a copper wire plate where an oscillating electrical current is applied (Conyers 2004:23). The wavelength produced by the antenna depends on the frequency of the oscillation and the size of the antenna. An antenna with a higher frequency will produce a shorter wavelength, which will resolve smaller objects at shallower depths. Lower frequency antennas produce longer wavelengths that can reflect deeper buried features, but with less resolution. Jennie Sturm of TAG Research by Sturm Inc. used a GSSI SIR 3000 GPR system with a 400 MHz antenna to conduct the GPR survey.

The velocity of the energy traveling from the antenna depends on the relative dielectric permittivity (RDP) of the penetrated material. Relative dielectric permittivity is a measure of the ability of a material to hold a charge from an applied electromagnetic field and then to transmit that energy (Conyers 2004). The higher the RDP, the slower the energy will pass through the material. Most archaeological sites have soils and sediments with RDPs ranging from 3 to 25, but this varies greatly as the RDP of a material can change with the addition or subtraction of moisture (Conyers 2004). Sturm determined that the RDP at Licapa II was 3.5 for the entire area she surveyed, which is quite fast for archaeological sites due to the lack of rain in this region. Based on the RDP, she was able to determine that the energy was moving through the subsurface at 7.8cm/nn.

Magnetometry is a geophysical method that maps local variations of the earth's magnetic field. Unlike GPR, which generates it own energy, magnetometry is a passive method because it uses the earth's magnetic field (Kvamme 2006). A buried brick wall, for example, might be more magnetic than the sediments in the surrounding earth. These contrasts are registered as intense black and white readings (dipoles) and are referred to as "anomalies." These anomalies can illustrate clear patterns for direct interpretation of a feature, such as a rectangular foundation, but many times excavation is needed to confirm these results. Chet Walker of Archeo-Geophysical Associates, LLD used a Bartington Grad 601-2 Fluxgate Gradiometer to conduct the magnetometry survey.

These two types of surveys were chosen for their compatibility. Features registered by GPR can often be different from features identified using magnetometry. Therefore, using these two techniques together can provide more information on the subsurface than if just one method was employed.

We conducted GPR surveys in three general areas of the site: to the east of the monumental core; to the immediate west of the core where surface ceramics were found; and southwest of the core, away from all surface architecture and ceramics. Magnetometry was conducted in the latter two of these areas.

Originally I planned to conduct the entire radar survey to the east of the core in an area that is now characterized by abandoned agricultural fields. The area in generally flat and free of looter's holes, but contains agricultural furrows and scattered scrub and brush. Because the surface visibility in this area is quite bad from agricultural use in the recent and more distant past, I was curious to see if structures could be identified below the agricultural layer. Looking for stuctures in this area assumed that it was not as intensely cultivated in Moche times, which may not have been the case since it is below the level of the canal. The soil conditions in this area proved to not be conducive to radar as the signal was attenuated quickly. The brush and the furrows were also cumbersome and made coupling, or sustained contact of the antenna with the ground, difficult. Therefore, we decided to abandon this area and move to the area to the west of the core that is surrounded by the other noted, yet uninvestigated, structures (the hypothetical storage facility, *montículos*, and platform cemetery area). This area was also relatively flat and devoid of looter's holes. We quickly discovered that this area was excellent for radar and placed six grids here: grid 2 (30 x 40 m), grid 3 (45 x 62 m), grid 4 (30 x 48), grid 5 (50 x 60 m), and grid 6 (30 x 60 m) (Figure 4.64 and Figure 4.65).

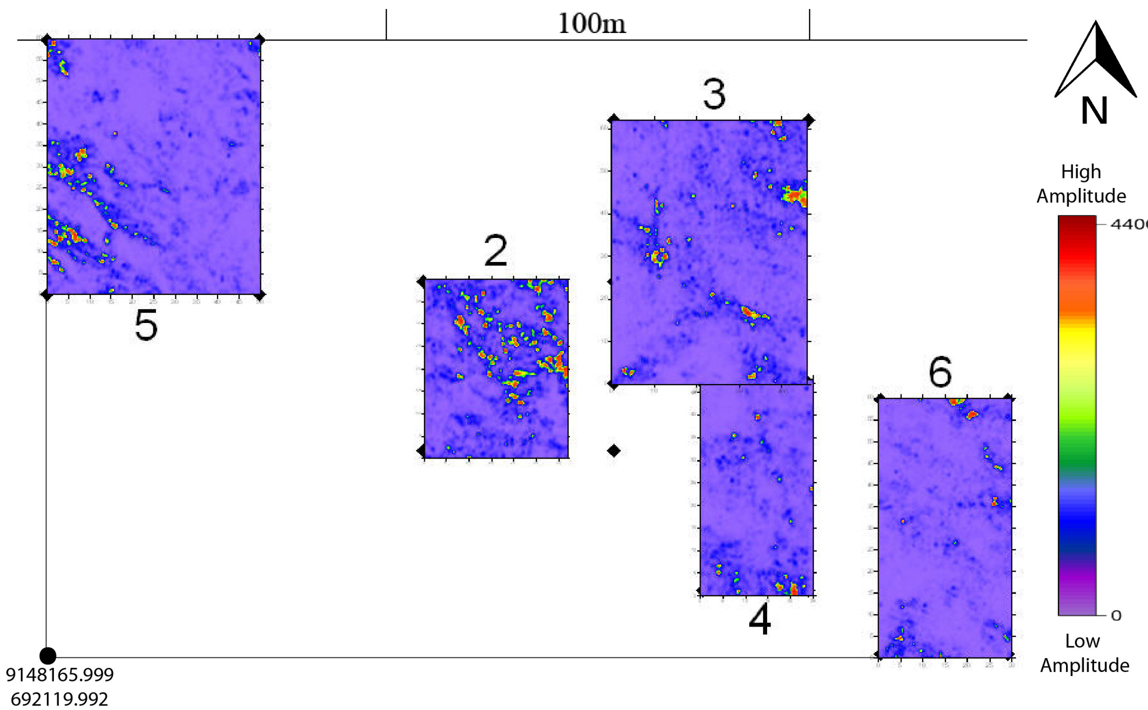


**Figure 4.65: Ground-penetrating radar grids showing high amplitude reflections in linear alignments that possible relate to walls and other buried features.**

In the slices shown in Figure 4.65 the high amplitude reflections (the yellows and reds) possibly correspond to walls and anthropogenic features. The linear directionality, all 50 degrees east of north, of these features suggests that these were planned structures. The magnetometry data from part of the same area (see Figure 4.64) also shows this same directionality to the subsurface features (Figure 4.66). There is the distinct possibility, however that these anomalies relate to geological structures, but because of their rectilinear form, rather than just linear alignment, this is unlikely.

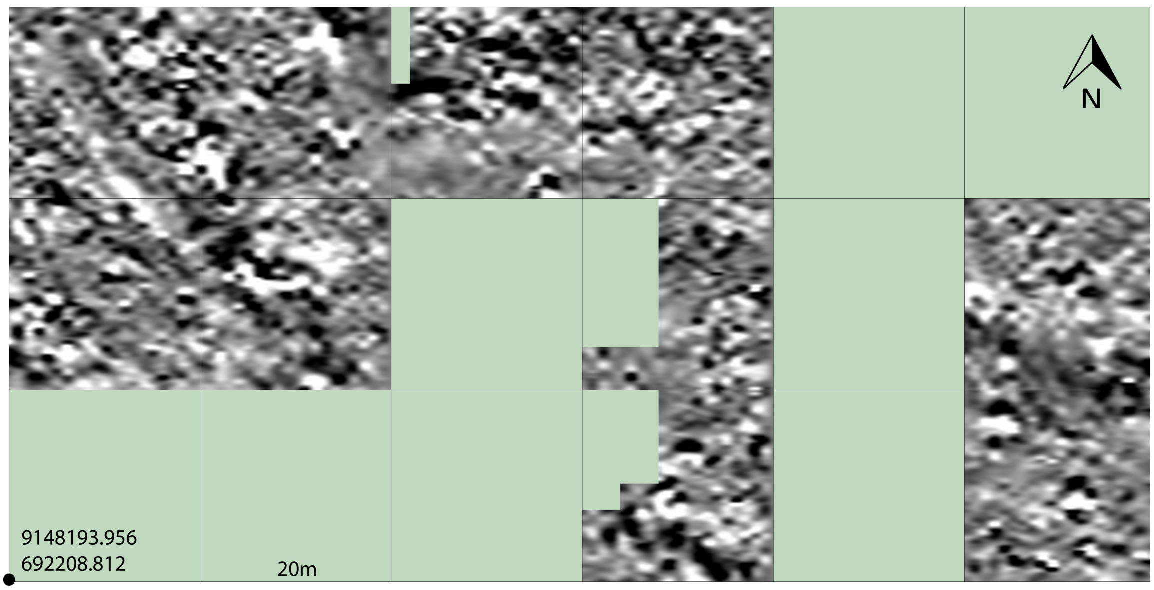


**Figure 4.66: Magnetometry data from same area as GPR survey shows same directionality to the buried features.**

The GPR survey areas to the southwest of the core also showed a similar pattern. First we placed one 40 x 40 meter grid far away from any detectable surface structures or ceramic scatters (the grid in the far southwest corner of Figure 4.64). In this grid, high amplitude reflections form a rectilinear pattern, possibly corresponding to a structure (Figure 4.67).

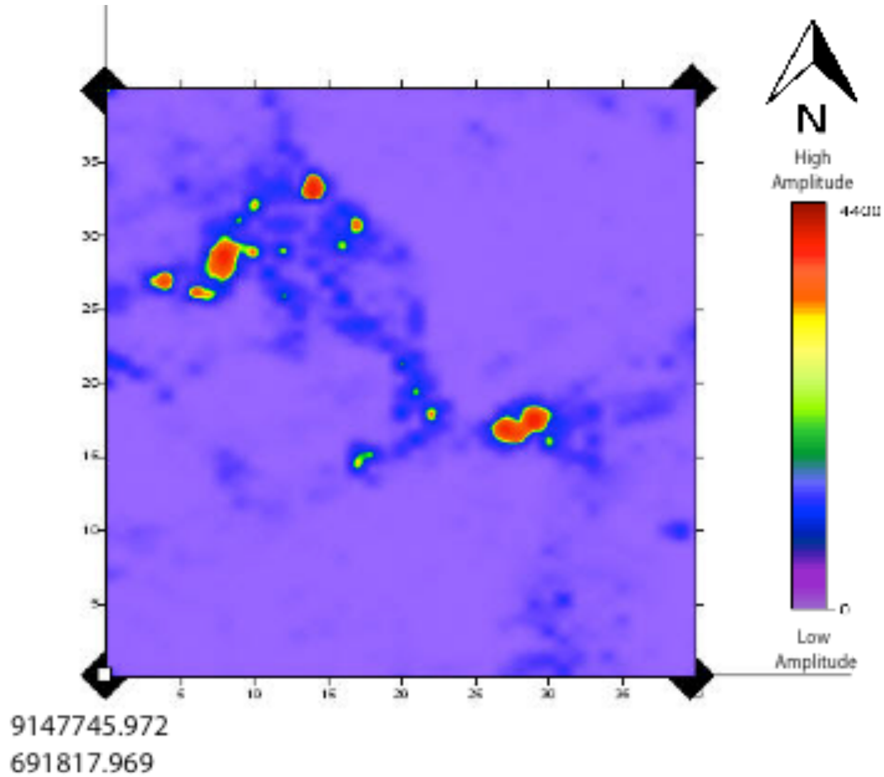


**Figure 4.67: Rectilinear reflections, delineated here in dark blue, green and red, may correspond to a structure.**

In the area directly south of the possible cemetery area, and highlighted in Figure 4.68, we also identified possible structures. Here, the combination of GPR and magnetometry proved very useful. In this area we were able to locate different walls associated with the same structure in both the magnetometry and GPR maps. Figure 4.69 shows an overlay of one of the GPR maps grids (Slice 10: 18-20 ns or 140-156 cm below the surface) made slightly transparent on top of the magnetometry map from the same area. This figure highlights which walls are clearly visible in the GPR map in red and the magnetometry map in yellow. Together these two images show a structure with internal room divisions that would not have been as clearly identifiable if both techniques were not employed.

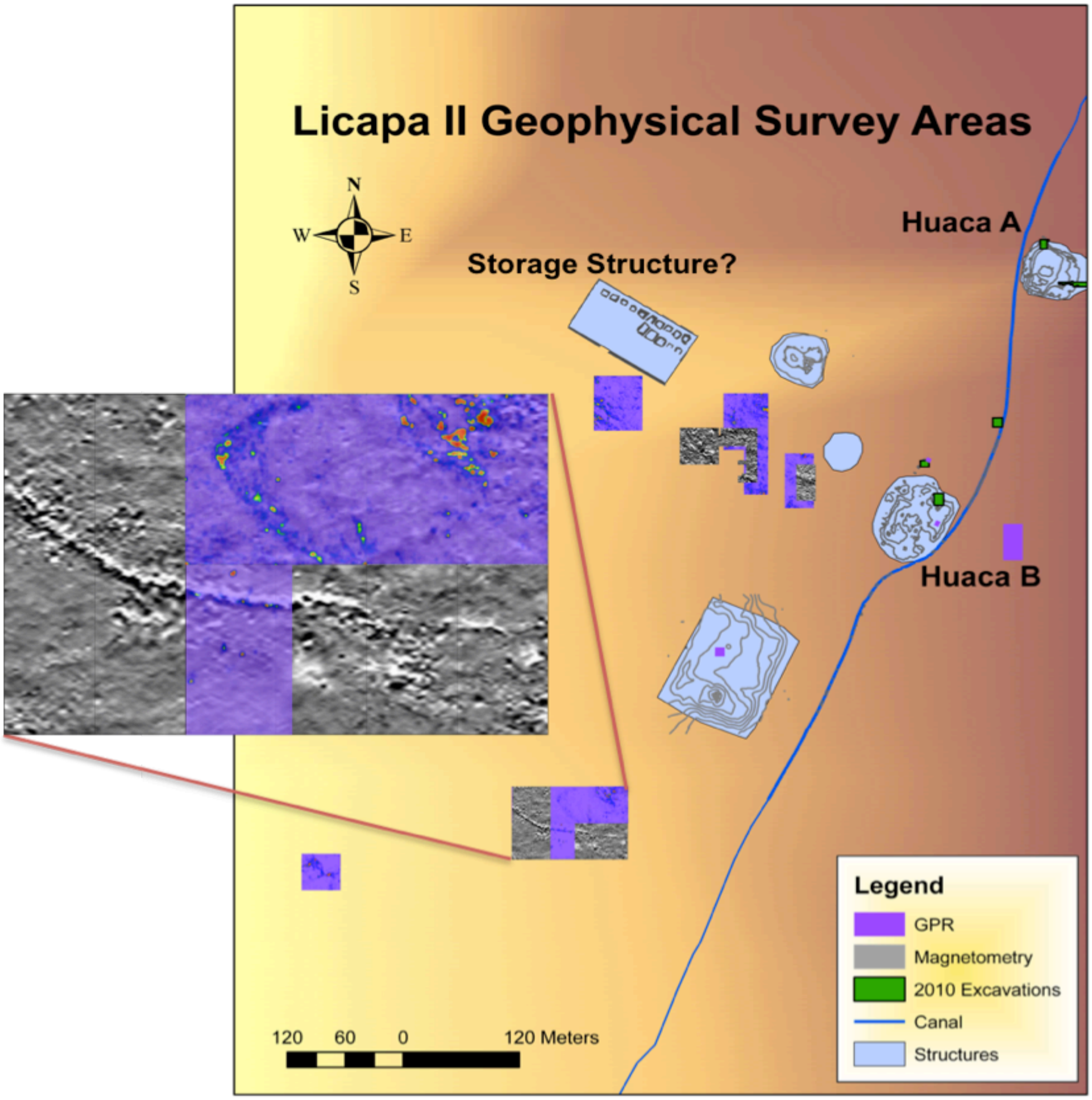


**Figure 4.68: GPR and magnetometry data combined to show complementary features.**

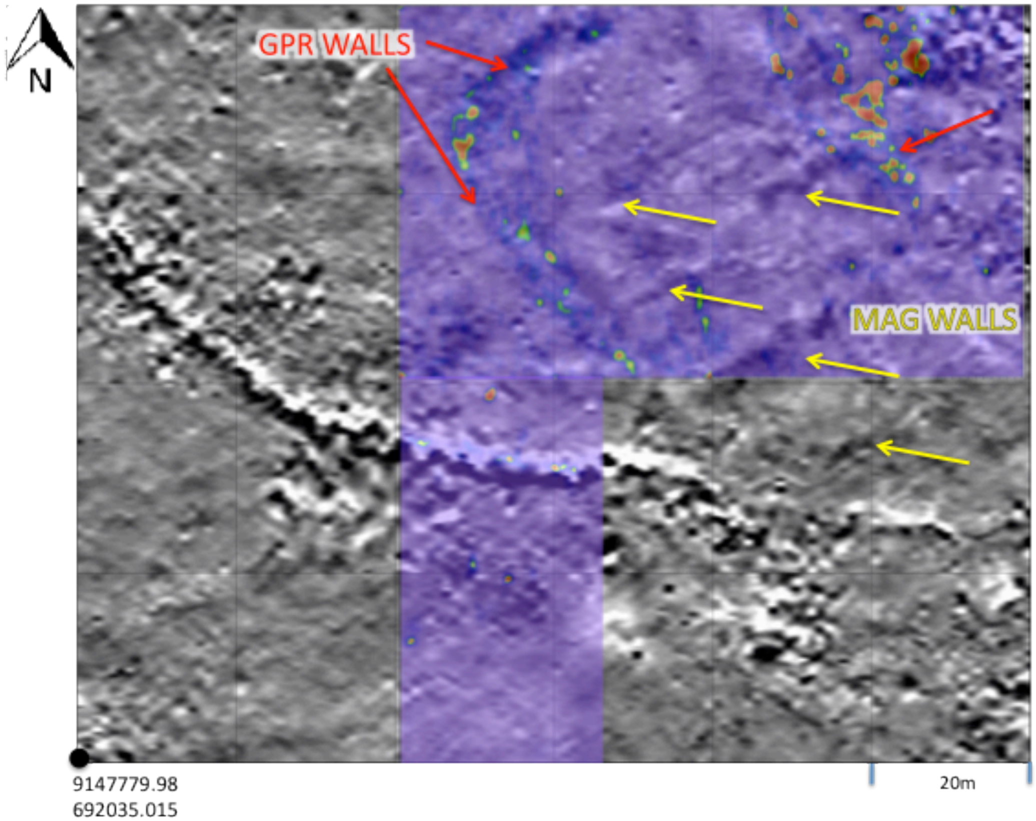


**Figure 4.69: Separate walls identified with GPR and magnetometry. The GPR reflections seem to be delineating the outline of a structure where as the magnetometry dipoles show the internal divisions.**

Walls are also clearly seen in the GPR reflection profiles as is noted in Figure 4.70). The black and white bands within the profile represent the positive and negative portions of the amplitudes. Planar and hyperbolic reflections are produced by the reflection of the radar energy from different subsurface features as the antenna moves over the ground surface. Planar reflections are the product of horizontal subsurface features such as, ancient living surfaces, and stratigraphic horizons. Hyperbolic reflections occur from a single object, such as a wall. In the profile shown here, both hyperbolic and planar reflections are present. The hyperbolic reflections likely correspond to walls and the planar reflection to a living surface.

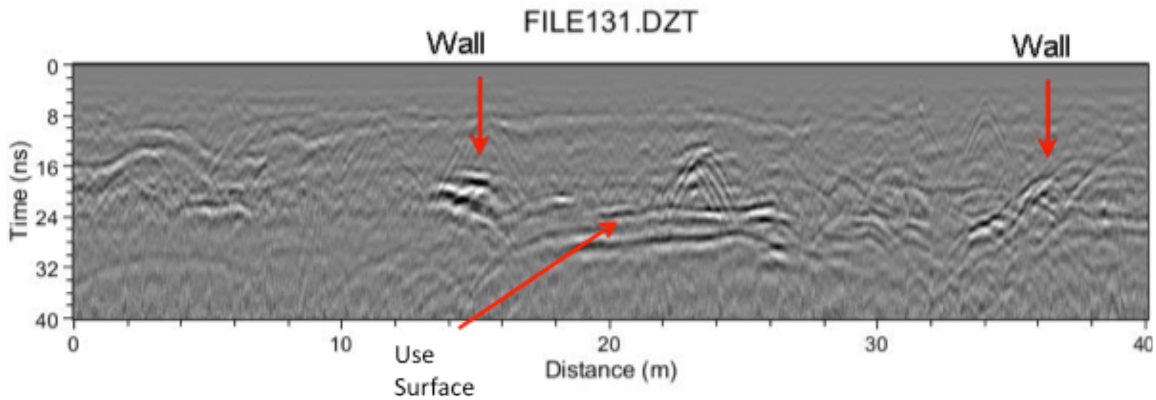


**Figure 4.70: GPR reflection profile with linear and hyperbolic reflections. The linear reflection corresponds to a flat surface, such as a floor. The antenna passing over a wall likely created the hyperbolic reflection.**

The surface area covered by the geophysical surveys was limited due to time constraints, but the results proved to be very promising. The geophysical surveys demonstrate that the plain to the west consisted of various compounds and structures. GPR data show that the majority of the walls are between 125-170 cm below the surface and are all likely from a single occupation. What can preliminarily be determined is that all of the architecture is oriented at the same angle, roughly 50 degrees east of north, which is a different angle from the architecture seen in the monumental core (24 degrees east of north). The reason for the difference in architectural angle in unknown at this time, but could potentially suggest that this area was built at a different time period, by different people, or served a different function. Ceramics from the surface collection in the area southwest of the monumental core are mostly utilitarian in nature, suggesting a residential nature for this part of the site. The ceramics that were not utilitarian were overwhelmingly “Moche” (fineline Moche IV and Moche V geometric) in style, indicating that the occupation dates to roughly the same time as the use of the monumental core. Our formal surface collection, however, did not reach as far south as the extent of all the survey grids, but surface observations in this area noted very few ceramics that are mostly utilitarian in nature. Overall, these preliminary results from the geophysics are very promising in that they suggest that there was potentially a residential population of Licapa II living in close proximity to the huacas. Ground-truthing is needed to confirm the function and nature of these identified features, but these data can be used to suggest that Licapa II was much larger than what is presently seen on the surface today.

**Other Structures Not Excavated**

Licapa II contains a number of structures that remain uninvestigated. This includes at least two, but possibly three *montículos,* the possible storage area, and the possible platform cemetery area (Figure 1.6). The form and extent of the *montículos* are difficult to determine from the surface. Today they appear as highly looted low mounds of dirt with some remains of adobe walls seen in looter's pits. The mounds are slightly taller than the surrounding surface, but no more than 3 meters at the highest. Fine ceramic materials were found on the surfaces, suggesting that they either contained burials or were used in some rituals. To fully understand the form and function of the *montículos,* excavation would be needed.

To the southwest of the core is a low platform structure. This structure measures 100 m east-west by 130 meters north-south and is oriented with Huaca A and Huaca B (24 degrees east of north). The platform is one meter high, but the southern section is higher (4-5 meters) (see Figure 1.6). While visiting the site, Santiago Uceda suggested that this might have been used as a cemetery, since adobes and large stones are seen in the looter's holes and may have corresponded to tomb architecture. Future excavations in this area will confirm the function of this structure.

The final structure of note is the possible storage facility. This structure is located on the current western edge of the site. Chicken farms to its immediate west have obscured any other structures in this area. However, surface survey suggests that there may not have been much occupation past this structure. The structure is 120 m east-west by 65 meters north-south. It is oriented at a slightly different angle than the rest of the architecture at the site: 33 degrees east of north. Unlike the other structures on the site, this is not a mound or platform. It is a walled in compound with a series of at least 15 "bins," or small rooms. The reason I refer to it as a storage structure is because of the "bins" running along the northern side (Figure 4.71). These "bins" range between 3 x4 meters and 8 x 9 meters. Inside the walls but to the south of the bins there is a large flat court-like area. To the north of the "bins" is a possible corridor. During the field season we mapped this structure, but no excavations were performed.

This structure is quite similar to the storage structures described by Martha Anders (1981) at Pampa Grande (Figure 4.72). She describes three categories of storage structures at the site. Each are composed of rooms and an associated surrounding court. The room size varies between structures, but is consistent within a single structure. The major difference between the "bins" at Licapa II and the storage rooms at Pampa Grande seems to be the variation in the size within the single structure at Licapa II. However, without excavation I cannot be certain of the exact size of any of the bins or if they had entrances. Overall, the patterns between the two sites seem quite similar, suggesting that the structure at Licapa II may have served a similar purpose as those at Pampa Grande.

## Storage Structure

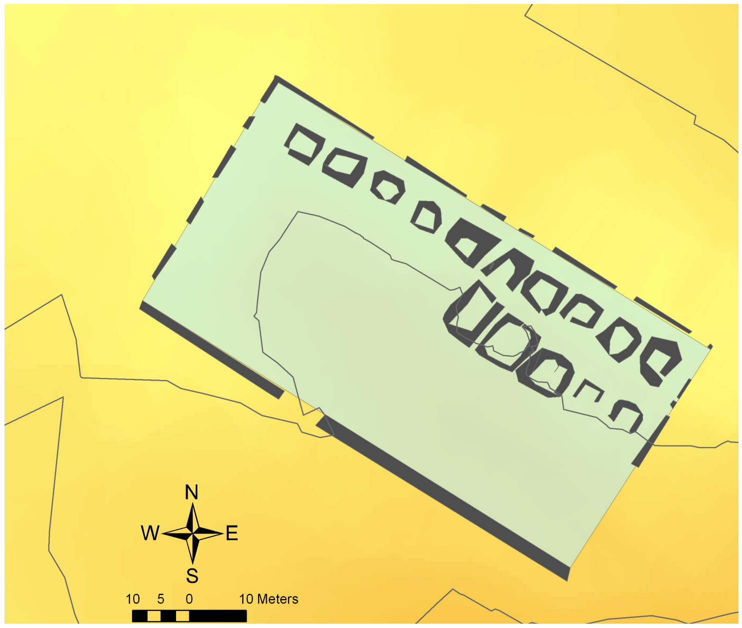


**Figure 4.71: Close-up view of the possible storage structure at Licapa II. The "bins" are seen along the northern side.**

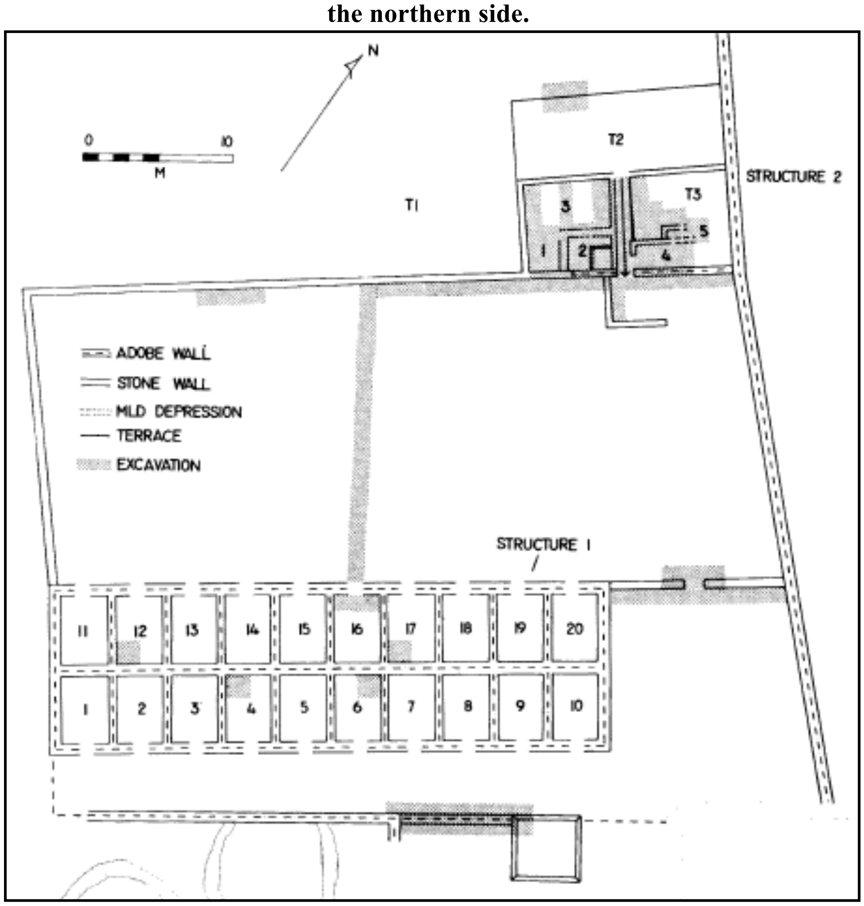


**Figure 4.72: Storage area at Pampa Grande excavated by Martha Anders (Anders 1991). Rooms, or "bins" are seen in the center of this structure.**

Because of its distinct form compared to other structures at the site, I originally thought that this dated to a later period, possibly Chimu. However, the utilitarian ceramics found around and within the structure were no different from those found on the rest of the site, suggesting that it was indeed Moche and related to the primary occupation of the site. Excavations are needed to confirm this hypothesis, but the proximity to the canal and therefore, agricultural fields; the potential for a large residential occupation, as suggested by geophysics; and the comparability between this structure and similar ones at the contemporary site of Pampa Grande, makes it likely that a storage structure could have been a feature at this site.

**Summary of Fieldwork and Implications**

The combined efforts of surface collection, excavation, and geophysical survey proved to be an effective methodology for investigating the role of Licapa II. Surface collections helped to show the spatial distribution of the different types of ceramics to better understand the function of the different site sectors. Excavations helped demonstrate that the form of the two main huacas were significantly different, as were the activities performed and materials used at them. The activities such as feasting and food preparation along with the enclosed intimate spaces of Huaca B contrast markedly with the highly visible Huaca A that may have been associated with worship and sacrifice. Ceramic assemblages and radiocarbon dates show that they were not built at the same time, though Huaca A could have remained in use in some capacity while Huaca B was in use. Excavations also showed that the area between the huacas was domestic or residential in nature and is, therefore, likely similar in function to the Urban Zone at

Huacas de Moche. Finally, geophysical surveys showed that a large residential sector potentially existed to the southwest of the major monuments.

In Chapter 5 I discuss the subsistence economy and everyday life at Licapa II based on the material remains apart from the ceramics. Chapter 6 deals exclusively with the ceramics found at the site. In this chapter I also compare ceramics from other sites to those found at Licapa II. Chapter 7 is a comparative analysis of architecture at Licapa II and other Moche sites. In Chapter 8 I discuss the radiocarbon data. Together these datasets from Licapa II help elucidate the changing nature of the Moche political landscape through time.

# CHAPTER 5

## SUBSISTENCE, CLIMATE CHANGE, AND ECONOMY AT LICAPA II

In this chapter I review the materials analyzed from Licapa II aside from the ceramics. These include floral and faunal remains that tell us about the Licapa II subsistence economy. Shell, or mollusk, data elucidates climatic changes as well as diet and trade. Also, lithics, textiles, metals, and other materials of interest, such as wood and bone items are discussed. Overall, this chapter aims to draw a more complete picture of the economy and everyday life at Licapa II and situate these practices within the Moche world. I analyze ceramic data in the following chapter.

### Subsistence and Climate Change at Licapa II

Flora

Botanical and faunal remains found at Licapa II are typical of the Moche diet seen elsewhere and demonstrate that the people of Licapa II were participating in a diverse subsistence economy. Food plant remains include beans, peanuts, pepper, maize, squash, lucuma, and avocado and made up the majority of the botanicals recovered, with maize being the most prevalent (52%). Industrial plants, which include reeds, *algarrobo* and *zapote,* were also found on the site. *Algarrobo* is a type of spiny tree in the genus *Prosopis*, which is in the pea family. *Algarrobos* can grow to be quite large and their branches and trunks were used in the construction of tombs, huacas, and other structures. *Zapote* is a type of shrub or brush. The fruit of the *zapote* can be eaten and the branches and leaves were probably used for kindling. A very small percentage, .26 of the entire assemblage, belonged to marine plants, suggesting that seaweed was not a diet staple (Figure 5.1 and Figure 5.2). No cotton was found although the majority of the textiles were made of cotton (see Vásquez and Rosales 2010 for full report on the flora and fauna).

Since Licapa II sits on a branch of a canal that was functioning, or potentially even built during Moche times, it is likely that the most of the plants used for food could have been cultivated close to the site to support the Licapa II population. Materials such as *algarrobo* and *zapote* could have also have been found near by. *Zapote* is very prevalent in this part of the Chicama Valley and covers parts of the sites today. *Algarrobo* forests were much more common in the past than they are today throughout much of coastal Peru (Beresford-Jones et al. 2009; Dillehay and Kolata 2004). *Algarrobo* forests could have existed just beyond the skirt of Cerro Azul in the past as they do today. Currently, a large stand of *algarrobo* is located just to the north of Licapa II, but it is on private land and commercially managed.

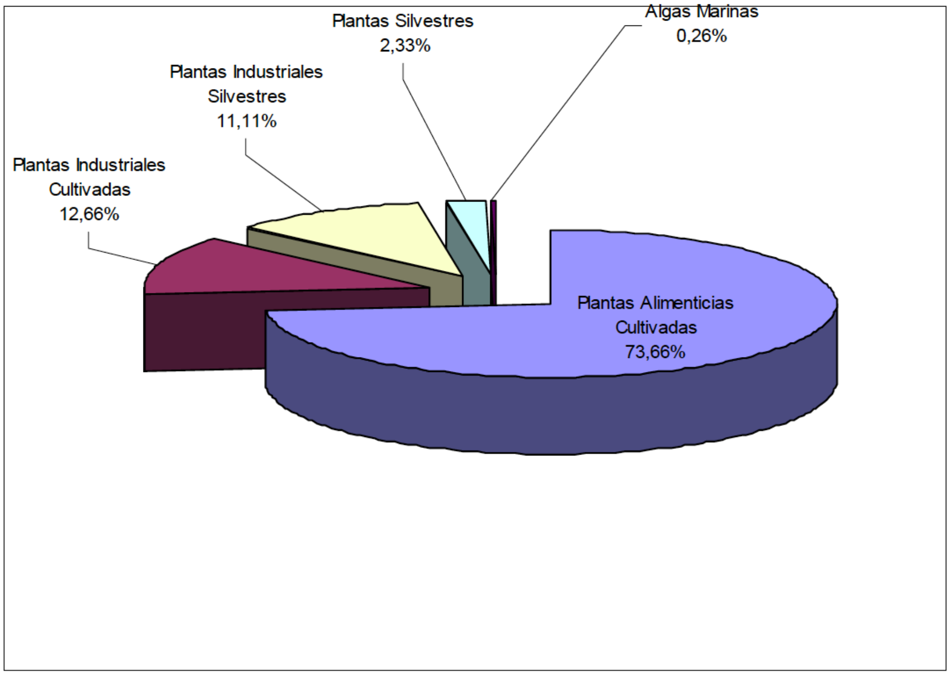


**Figure 5.1: Distribution of flora types at Licapa II. Cultivated food plants (Plantas Alimenticias Cultivadas) make up 73.66%. Industrial cultivated plants (Plantas Industriales Cultivadas) make up 12.66%. Wild industrial plants (Plantas Industriales Silvestres)**

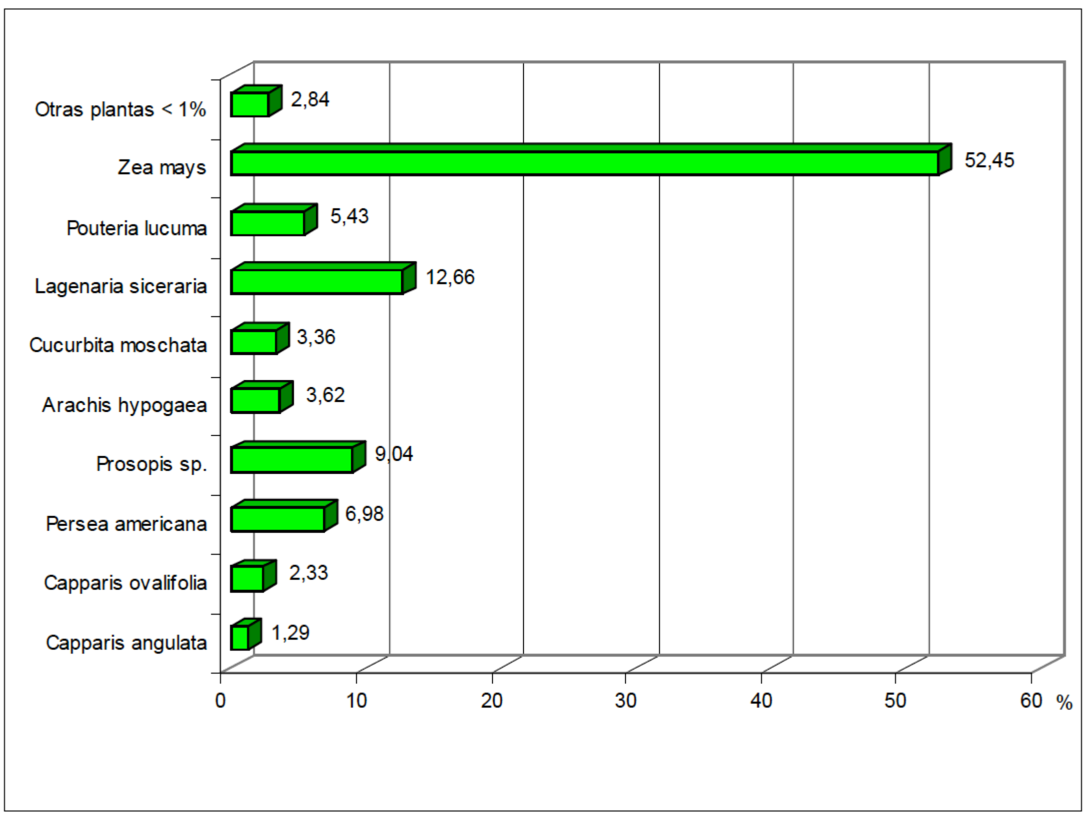


**Figure 5.2: Cultivated food plants at Licapa II. Zea mays (maize) makes up 52.45%. The next most prevalent plant is Lagenaria siceraria (bottle gourd) at 12.66%. Prosopis sp. (Algarrobo) makes up 9.04% of the assemblage.**

Fauna

Mammals were the main source of protein and made up over 95% of the recovered fauna remains with the remainder belonging to birds, reptiles, and fish (Figure 5.3 and Figure 5.4). Camelid, mainly alpaca comprised of 58% of the entire assemblage. *Cuy* (guinea pig) were also prevalent throughout the site and especially in Units 3 and 4. Curiously, 213 capuchin monkey bones were found together in the lowest level of Unit 4. The remains were found on either side of a course of adobes with no foundation and sitting atop the sterile sand. Botanical remains from this same feature were recovered and yield some of the earliest dates at the site, as will be discussed in the following chapter. The monkey bones suggest that early Licapa II inhabitants likely had some relationships with people from the Amazon, since capuchins are a rainforest species not native to coastal Peru. However, monkeys are frequently portrayed in Moche art, and later Chimu art, suggesting that they may have been bred or kept on the coast prehistorically. The cranium of another capuchin monkey was recovered near the row of four *paicas* in Unit 4 and was from a later time period. The remaining mammals include, sea lion, white-tailed deer, and domestic dog, all animals prevalent in Moche art. One of the dog humeri contained cut marks, indicating that dog was likely butchered and consumed (Vásquez and Rosales 2010).

There was no detectable significance difference in the distribution of species by unit or by level, which suggests that the diet was consistent through time. However, excavations were focused on the monumental core of the site and did not specifically aim to look at the Licapa II diet from the perspective of households. As mentioned, the number of camelid bones significantly outnumbers other species found on the site.

Camelid remains were most abundant in Unit 3, but Unit 4 also contained a large amount (see Vásquez and Rosales 2010:7). Camelid consumption has been linked to ritual feasts and elite-contexts (Bray 2003; Gumerman 2002; Hastorf 2003). Pozorski (1976, 1979, 1982) has shown that llamas supplied 90% of animal derived protein at the Huacas de Moche. She also found that rural Moche Valley settlements proportionally consumed less camelid and relied on other protein, such as seafood and marine birds. However, it should be noted that the rural settlements she examined were from the Chimu period, and were all close to the coast.

Potentially more relevant to this study, Gumerman (2002) found that camelid remains were more prevalent in high-class households at Pacatnamú (from the Lambayeque Period), as opposed to the lower class dwellings, which suggest the elites consumed more of this meat. Cutright (2009) shows that for the Chimu Period site of Pedregal in the Jequetepeque Valley, feasts involving the choice cuts of llamas occurred in a certain sector of the site. Shimada and Shimada (1985) and Johnson (2010) found high proportion of camelid consumed in all sectors of the large site of Pampa Grande. They also note that they were also used for religious sacrifice, further demonstrating their importance.

All of this suggests that llamas and alpacas were consumed in great quantities during the EIP through the LIP, but ceremonial centers with larger proportions of camelid meat to other meat sources may have been using it more in feasts or elite-related contexts. Since the proportion of camelid to other consumed meat protein at Licapa II is so high, ritual feast and elite cuisine could be an attributing factor.

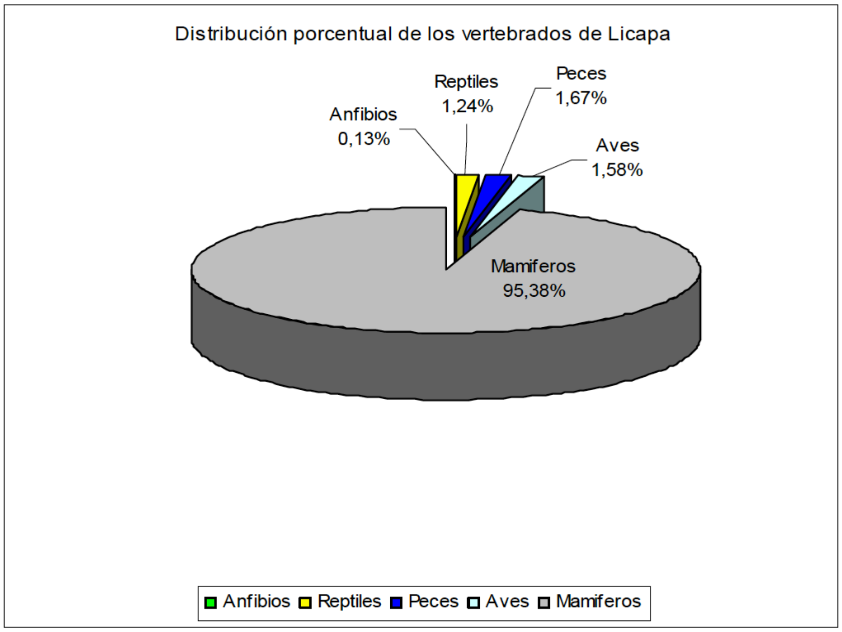


**Figure 5.3: Distribution of percent of vertebrates at Licapa II. Mammals (mamiferos) make up 95.38%. Fish (Peces) make up 1.67%. Birds (Aves) make up 1.58%. Reptiles (Reptiles) make up 1.24% and Amphibians (Anfibios) make up .13% of the assemblage.**

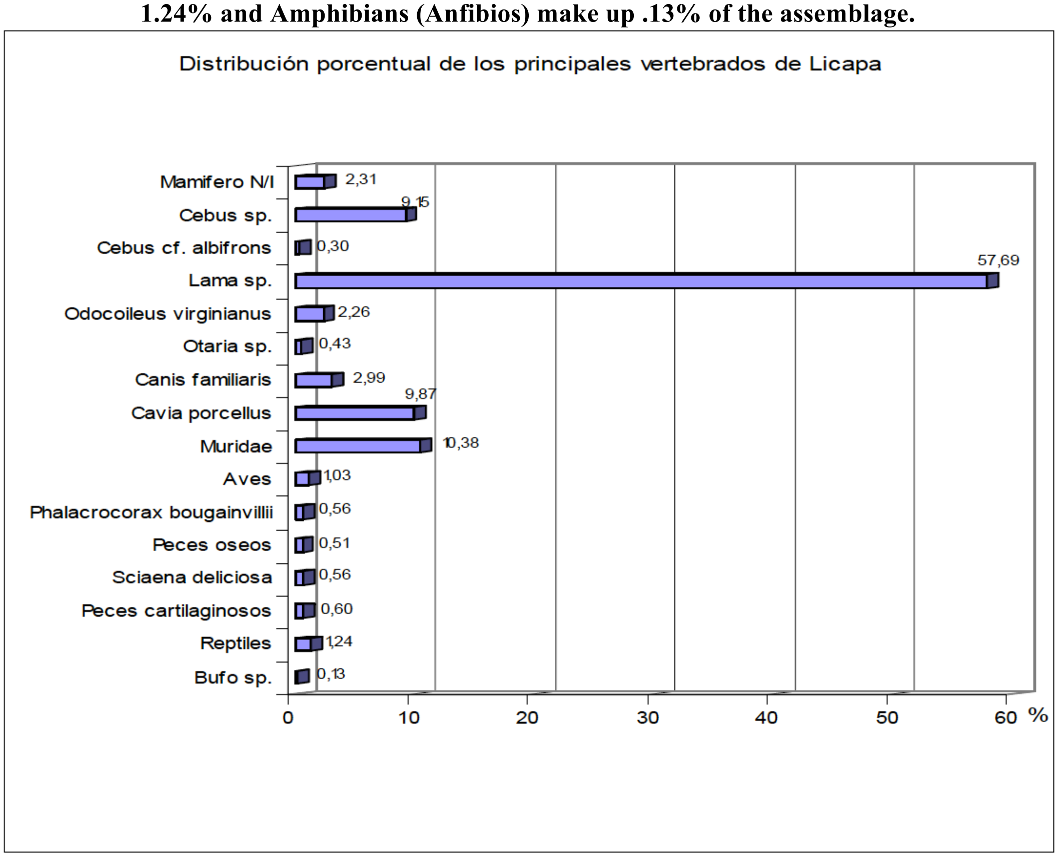


**Figure 5.4: Distribution of percent of principal vertebrate species at Licapa II.** ***Lama sp*** **(camelids) make up 57.69 %.** ***Muridae*** **(mice, rats) make up 10.38%. Cavia** ***porcellus*** **(cuy) make up 9.87%.** ***Cebus sp*** **(Capuchin Monkey) make up 9.15%.** ***Canis familiaris*** **(dog) make up 2.99% and** ***Odocolleus virginianus*** **(white-tailed deer) make up 2.26%.**

Mollusks

Molluks were another important source of protein and are found in abundance at Moche sites (Table 5.1 and 5.2). Some apparent patterns that may relate to trade, El Niño, La Niña or a combination of these factors can be gleaned from the mollusk data. Overall, *Donax* and *Polinices* dominate the assemblage at Licapa II. Both of these are sandy beach species, however they inhabit different zones. *Donax,* a small bivalve, lives in the near-coast intertidal zone and is easily harvested in quantity. *Polinices*, a sea snail, on the other hand, supposedly lives in a zone eight meters below the surface or deeper, which raises interesting questions on how it was harvested. According to Dan Sandweiss (personal communication), this species likely survives El Niño, but was probably not driven closer to shore during these events. During El Niño events the water temperature is warmer. It is, therefore, unlikely that *Polinices* would move closer to shore since they need colder temperatures to survive. If anything they would move to deeper depths. He does tentatively suggest that possibly La Niña, which causes the water temperature to drop, could have caused the species to move closer to the surface to maintain their core temperature range, but no concrete data exists on this hypothesis.

Plotting *Donax* vs. *Polinices* shows that there are temporal shifts in the prevalence of these species at the site. Huaca A (Units 1 and 2) has a much higher frequency of *Polinices*, whereas *Donax* dominate Huaca B (Unit 5) (Figure 5.5). Based on the radiocarbon dates, Huaca A is 50-100 years older than Huaca B and its major use dates to around the time of a major El Niño event recorded by Moseley et al. (2008) at Dos Cabezas. A date from the desiccated brain of the individual in Tomb 2 at Dos Cabezas, who was interred immediately following the event, dates to A.D. 500-660 with a weighted median date of 580 AD (Donnan 2007; date calibrated with the Southern Hemisphere curve using Oxcal 4.1). Although there is no evidence for an El Niño dating to this time at Licapa II, La Niña events often precede such events. This could potentially account for the increased amount of of *Polinices* on Huaca A. On the other hand, there could be other functional differences in the use of these huacas that account for the unequal distribution.

The levels of Units 3 and 4 that correspond to the major occupation of Huaca B also have a higher frequency of *Donax* (Figure 5.6 and Figure 5.7). The upper levels of Unit 3, from which we have the latest dates for the site (Level 3D and 4: A.D. 710-970), again revert to a pattern where *Polinices* outnumbers *Donax,* which could indicate another ENSO related climatic change. This is further supported from the flooding event seen in upper levels of Unit 4, which also has a late date since it covered the last floor of the Huaca B platform (floor 5). However, shells from these levels (Level 2-4 Unit 4) do not show the same pattern. Furthermore, the upper most levels (1 and 2 of Unit 3) were highly disturbed so looting could be a contributing factor.

Other mollusk species prevalent at the site are intertidal rock dwellers. These include *Prisogaster niger, Thais sp, Tegula* (all types of sea snail), and *Semimytilus* (mussel). These all occur in the rocky subtidal and intertidal coastal zone and are easily accessible. Again, the combined amount of intertidal dwellers outnumbers the *Donax* on Huaca A, but the reverse is true for Huaca B (Figure 5.8). For Units 3 and 4 where we have difference in the stratigraphy, the pattern is the same. The intertidal shells are slightly more prevalent than *Donax* in the lowest levels of Unit 4 that date to the same time as Huaca A. In the upper levels of Unit 4, and all of Unit 3, *Donax* outnumbers the intertidal species. This could possibly suggest that the exploited littoral zone changed either because the fishers moved to an area with fewer rocks and more sand, or the beach itself changed. A change in the beach could be the result of sand deposited along the coastline by an El Niño. The rains from El Niño flush sediments to the shoreline and it moves to the north of the river. Sand from this sediment load is deposited on the shore face making it sandy rather than rocky (Sandweiss et al. 2009; Shafer Rogers et al. 2004).

Other species found on the site, but exclusively in Unit 3 include warm water *Spondylus* and *Chione*, which are likely trade items. Also, *Nassarius luteostoma* is a tropical species and is also found exclusively in Unit 3, however *Nassarius dentifer* is also found in Unit 3 and is a cold-water shell. It is possible that El Niño could be effecting the displacement of shells seen in the multiple levels of Unit 3 or trade was particularly important for different shell species at different points in time.

Overall, shell data from Licapa II correlate well with the ceramic and radiocarbon data that will be presented in the Chapter 8. Together these data suggest that Huaca A and Huaca B were used at different periods of time. These different phases of use correspond with different mollusk procurement strategies that could be related to climatic changes through time. These differences could also be related to shifting trade relationships, or different functions of the Huacas themselves. For example, certain activities may have been performed on Huaca A that were different from Huaca B, thus accounting for the uneven distribution of mollusk species across the site.

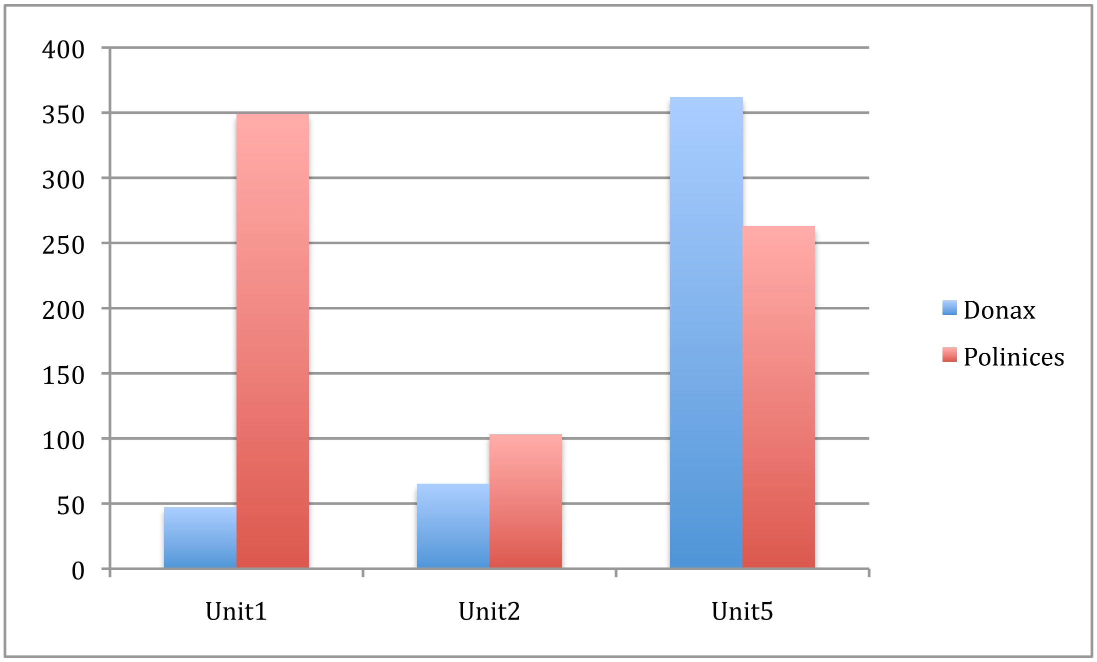


**Figure 5.5:** ***Donax*** **vs.** ***Polinices*** **shown for Huaca A (Units 1 and 2) and Huaca B (Unit 5). In Units 1 and 2** ***Polinices*** **is more prevalent. In Unit 5** ***Donax*** **is more prevalent.**

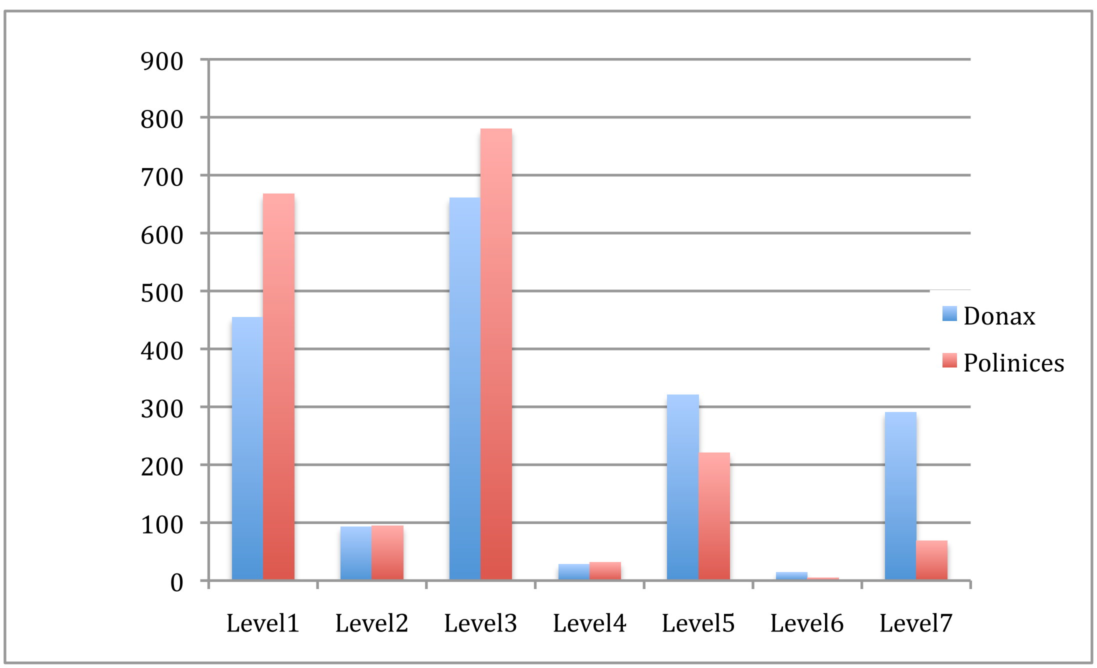


**Figure 5.6:** ***Donax*** **vs.** ***Polinices*** **for Unit 3 by level.**

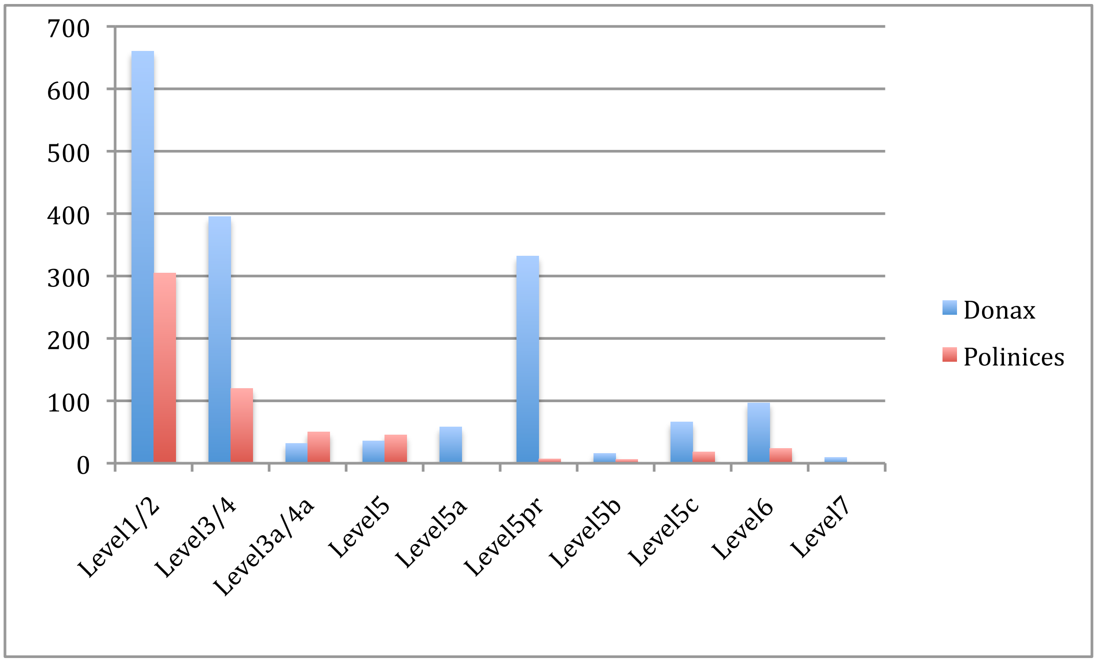


**Figure 5.7:** ***Donax*** **vs.** ***Polinices*** **for Unit 4 by level.**

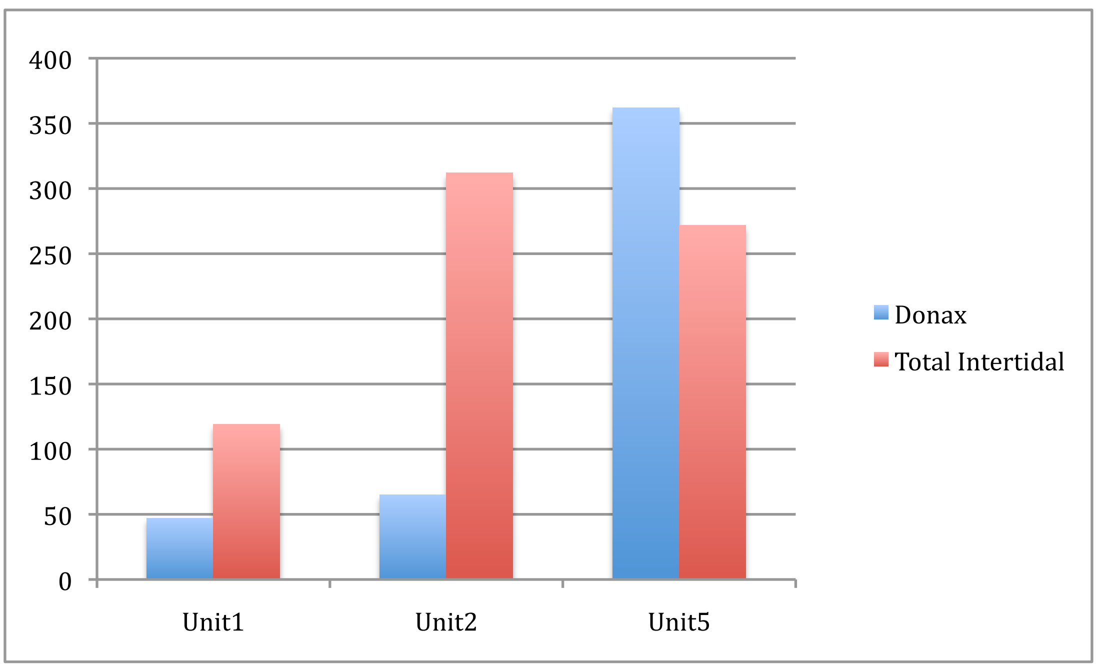


**Figure 5.8:** ***Donax*** **vs. total intertidal species for Huaca A (Units 1 and 2) and Huaca B (Unit 5).**

**Table 5.1: Mollusk spread sheet data by unit and level for Units 1, 2, 3 and 5. Species with the highest counts are highlighted for each unit and level.**

| SPECIES | BIOTOPE | | | Unit 1 | | Unit 5 | | Unit 2 | | Unit 3 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SANDY | ROCKY | LAND | # | % | # | % | # | % | Level 1 | | Level 2 | | Level 3 | | Level 4 | | Level 5 | | Level 6 | | Level 7 | | TOTAL Unit 3 | |
| | | | | | | | | | | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % |
| *Fissurella pulchra* | | X | | | | | | | | | | | | | | | | 1 | 0.14 | | | | | 1 | 0.02 |
| *Acmaea sp* | | X | | | | | | | | 1 | 0.07 | | | | | | | | | | | | | 1 | 0.02 |
| *Scuria viridula* | | X | | | | | | | | | | | | | | | | 1 | 0.14 | | | | | 1 | 0.02 |
| *Tegula atra* | | X | | 9 | 1.67 | 29 | 2.99 | 17.00 | 3.18 | 20 | 1.32 | 6 | 2.34 | 18 | 0.99 | 2 | 2.47 | 20 | 2.75 | 1 | 3.57 | 39 | 7.91 | 106 | 2.16 |
| *Prisogaster niger* | | X | | 51 | 9.46 | 165 | 17.03 | 257.00 | 48.04 | 95 | 6.26 | 21 | 8.20 | 74 | 4.09 | 5 | 6.17 | 52 | 7.14 | 2 | 7.14 | 54 | 10.95 | 303 | 6.17 |
| *Polinices uber* | X | | | 349 | 64.75 | 263 | 27.14 | 103.00 | 19.25 | 668 | 44.03 | 95 | 37.11 | 780 | 43.07 | 32 | 39.51 | 221 | 30.36 | 5 | 17.86 | 69 | 14.00 | 1870 | 38.05 |
| *Synum cymba* | X | | | 7 | 1.30 | 15 | 1.55 | 4.00 | 0.75 | 40 | 2.64 | 2 | 0.78 | 36 | 1.99 | | | 19 | 2.61 | 2 | 7.14 | 3 | 0.61 | 102 | 2.08 |
| *Thais haemastoma* | | X | | 9 | 1.67 | 13 | 1.34 | 2.00 | 0.37 | 17 | 1.12 | 5 | 1.95 | 3 | 0.17 | | | 13 | 1.79 | | | | | 38 | 0.77 |
| *Thais biserialis* | | X | | 6 | 1.11 | 10 | 1.03 | 11.00 | 2.06 | 22 | 1.45 | | | 34 | 1.88 | 3 | 3.70 | 6 | 0.82 | | | 3 | 0.61 | 68 | 1.38 |
| *Thais chocolata* | | X | | 31 | 5.75 | 24 | 2.48 | 18.00 | 3.36 | 85 | 5.60 | 8 | 3.13 | 83 | 4.58 | 2 | 2.47 | 30 | 4.12 | | | 11 | 2.23 | 219 | 4.46 |
| *Thais sp* | | X | | 13 | 2.41 | | | 2 | 0.374 | 6 | 0.40 | 4 | 1.56 | 24 | 1.33 | 1 | 1.23 | 2 | 0.27 | | | | | 37 | 0.75 |
| *Trophon* | | X | | 3 | 0.56 | | | 2 | 0.374 | 1 | 0.07 | | | | | | | | | | | | | 1 | 0.02 |
| *Prunum curtum* | X | | | 11 | 2.04 | | | | | | | | | 1 | 0.06 | | | | | | | | | 1 | 0.02 |
| *Crassilabrum* | X | | | | | | | | | 1 | 0.07 | | | 2 | 0.11 | | | | | | | | | 3 | 0.06 |
| *Nassarius dentifer* | X | | | | | 16 | 1.65 | 3.00 | 0.56 | 28 | 1.85 | 8 | 3.13 | 39 | 2.15 | 3 | 3.70 | 8 | 1.10 | | | 1 | 0.20 | 87 | 1.77 |
| *Nassarius luteostoma* | X | | | | | | | | | 9 | 0.59 | | | | | | | | | | | | | 9 | 0.18 |
| *Olivella columellaris* | X | | | | | | | | | 2 | 0.13 | | | 6 | 0.33 | 1 | 1.23 | | | | | | | 9 | 0.18 |
| *Oliva peruviana* | X | | | 2 | 0.37 | | | | | | | | | | | | | 2 | 0.27 | | | | | 2 | 0.04 |
| *Scutalus proteus* | | | X | 1 | 0.19 | 27 | 2.79 | 44.00 | 8.22 | 16 | 1.05 | 2 | 0.78 | 4 | 0.22 | | | 8 | 1.10 | 2 | 7.14 | 10 | 2.03 | 42 | 0.85 |
| *Aulacomya ater* | | X | | | | 13 | 1.34 | 1.00 | 0.19 | 7 | 0.46 | 1 | 0.39 | 14 | 0.77 | | | 4 | 0.55 | | | 1 | 0.20 | 27 | 0.55 |
| *Chhoromytilus chorus* | | X | | | | | | | | | | | | | | | | | | | | 1 | 0.20 | 1 | 0.02 |
| *Semimytilus algosus* | | X | | | | 31 | 3.20 | 6.00 | 1.12 | 31 | 2.04 | 5 | 1.95 | 18 | 0.99 | 2 | 2.47 | 4 | 0.55 | 1 | 3.57 | 7 | 1.42 | 68 | 1.38 |
| *Chione* | X | | | | | | | | | | | | | 1 | 0.06 | | | | | | | | | 1 | 0.02 |
| *Donax obesulus* | X | | | 47 | 8.72 | 362 | 37.36 | 65.00 | 12.15 | 455 | 29.99 | 93 | 36.33 | 661 | 36.50 | 28 | 34.57 | 321 | 44.09 | 14 | 50.00 | 291 | 59.03 | 1863 | 37.91 |
| *Mesodesma donacium* | X | | | | | 1 | 0.10 | | | 4 | 0.26 | 1 | 0.39 | 4 | 0.22 | 2 | 2.47 | 10 | 1.37 | | | 2 | 0.41 | 23 | 0.47 |
| *Spondyluis princeps* | | X | | | | | | | | | | | | | | | | | | 1 | 3.57 | | | 1 | 0.02 |
| *Gasterópodos tropicales ni* | X | | | | | | | | | 8 | 0.53 | 4 | 1.56 | 6 | 0.33 | | | 5 | 0.69 | | | | | 23 | 0.47 |
| *Crustácos* | | X | | | | | | | | 1 | 0.07 | 1 | 0.39 | 3 | 0.17 | | | 1 | 0.14 | | | 1 | 0.20 | 7 | 0.14 |
| ***TOTAL*** | | | | 539 | 100.00 | 969 | 100.00 | 535.00 | 100.00 | 1517 | 100.00 | 256 | 100.00 | 1811 | 100.00 | 81 | 100.00 | 728 | 100.00 | 28 | 100.00 | 493 | 100.00 | 4914 | 100.00 |

**Table 5.2: Mollusk spread sheet data by unit and level for Unit 4. Species with the highest counts are highlighted for each level.**

| SPECIES | BIOTOPE | | | Unit 4 | | | | | | | | | | | | | | | | | | | | | | Site TOTAL | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SANDY | ROCKY | LAND | Level 1/2 | | Level 3/4 | | Level 3A/4A | | Level 5 | | Level 5A | | Level 5PR | | Level 5B | | Level 5C | | Level 6 | | Level 7 | | TOTAL Unit 4 | | | |
| | | | | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % |
| *Fissurella pulchra* | | X | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0.01 |
| *Acmaea sp* | | X | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0.01 |
| *Scuria viridula* | | X | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0.01 |
| *Tegula atra* | | X | | 44 | 3.02 | 24 | 3.34 | 1 | 0.94 | 3 | 2.83 | | | 4 | 0.93 | 3 | 6.98 | 1 | 0.61 | 24 | 10.39 | 8 | 12.31 | 112 | 3.30 | 273.00 | 2.64 |
| *Prisogaster niger* | | X | | 192 | 13.17 | 104 | 14.48 | 16 | 15.09 | 14 | 13.21 | 7 | 10.29 | 75 | 17.48 | 13 | 30.23 | 68 | 41.21 | 75 | 32.47 | 25 | 38.46 | 589 | 17.38 | 1365.00 | 13.19 |
| *Polinices uber* | X | | | 305 | 20.92 | 120 | 16.71 | 50 | 47.17 | 45 | 42.45 | 1 | 1.47 | 7 | 1.63 | 6 | 13.95 | 18 | 10.91 | 24 | 10.39 | 1 | 1.54 | 577 | 17.03 | 3162.00 | 30.56 |
| *Synum cymba* | X | | | 24 | 1.65 | 9 | 1.25 | | | | | | | 1 | 0.23 | | | 1 | 0.61 | 1 | 0.43 | | | 36 | 1.06 | 164.00 | 1.59 |
| *Thais haemastoma* | | X | | 9 | 0.62 | 4 | 0.56 | | | | | | | | | | | | | 1 | 0.43 | 1 | 1.54 | 15 | 0.44 | 77.00 | 0.74 |
| *Thais biserialis* | | X | | 25 | 1.71 | 11 | 1.53 | | | | | | | | | | | | | 1 | 0.43 | | | 37 | 1.09 | 132.00 | 1.28 |
| *Thais chocolata* | | X | | 41 | 2.81 | 13 | 1.81 | 2 | 1.89 | 2 | 1.89 | | | 1 | 0.23 | | | 1 | 0.61 | | | 1 | 1.54 | 61 | 1.80 | 353.00 | 3.41 |
| *Thais sp* | | X | | 9 | 0.62 | 3 | 0.42 | | | | | | | 1 | 0.23 | | | 1 | 0.61 | | | 1 | 1.54 | 15 | 0.44 | 67 | 0.65 |
| *Trophon* | | X | | 10 | 0.69 | 2 | 0.28 | | | 2 | 1.89 | | | | | | | | | | | 1 | 1.54 | 15 | 0.44 | 21 | 0.20 |
| *Prunum curtum* | X | | | 1 | 0.07 | | | | | | | | | | | | | | | | | | | 1 | 0.03 | 13 | 0.13 |
| *Crassilabrum* | X | | | 2 | 0.14 | 3 | 0.42 | | | | | | | | | | | | | | | | | 5 | 0.15 | 8 | 0.08 |
| *Nassarius dentifer* | X | | | 45 | 3.09 | 18 | 2.51 | 4 | 3.77 | | | | | 2 | 0.47 | | | 1 | 0.61 | | | | | 70 | 2.07 | 176.00 | 1.70 |
| *Nassarius luteostoma* | X | | | | | | | | | | | | | | | | | | | | | | | | | 9 | 0.09 |
| *Olivella columellaris* | X | | | | | | | | | 1 | 0.94 | | | | | | | | | | | | | 1 | 0.03 | 10 | 0.10 |
| *Oliva peruviana* | X | | | | | | | | | | | | | | | | | | | | | | | | | 4 | 0.04 |
| *Scutalus proteus* | | | X | 56 | 3.84 | 10 | 1.39 | 1 | 0.94 | 3 | 2.83 | 2 | 2.94 | 5 | 1.17 | | | 6 | 3.64 | 2 | 0.87 | 2 | 3.08 | 87 | 2.57 | 201.00 | 1.94 |
| *Aulacomya ater* | | X | | 26 | 1.78 | 1 | 0.14 | | | | | | | | | | | | | 1 | 0.43 | | | 28 | 0.83 | 69.00 | 0.67 |
| *Chhoromytilus chorus* | | X | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0.01 |
| *Semimytilus algosus* | | X | | 9 | 0.62 | 1 | 0.14 | | | | | | | 1 | 0.23 | 5 | 11.63 | 2 | 1.21 | 5 | 2.16 | 16 | 24.62 | 39 | 1.15 | 144.00 | 1.39 |
| *Chione* | X | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0.01 |
| *Donax obesulus* | X | | | 660 | 45.27 | 395 | 55.01 | 32 | 30.19 | 36 | 33.96 | 58 | 85.29 | 332 | 77.39 | 16 | 37.21 | 66 | 40.00 | 97 | 41.99 | 9 | 13.85 | 1701 | 50.19 | 4038.00 | 39.03 |
| *Mesodesma donacium* | X | | | | | | | | | | | | | | | | | | | | | | | | | 24 | 0.23 |
| *Spondyluis princeps* | | X | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0.01 |
| *Gasterópodos tropicales ni* | X | | | | | | | | | | | | | | | | | | | | | | | | | 23 | 0.22 |
| *Crustácos* | | X | | | | | | | | | | | | | | | | | | | | | | | | 7 | 0.07 |
| ***TOTAL*** | | | | **1458** | **100.00** | **718** | **100.00** | **106** | **100.00** | **106** | **100.00** | **68** | **100.00** | **429** | **100.00** | **43** | **100.00** | **165** | **100.00** | **231** | **100.00** | **65** | **100.00** | **3389** | **100.00** | **10346** | **100.00** |

## Other Objects Found at Licapa II

<u>Textiles</u>

Only 30 textile fragments were recovered from the site and are mostly small S-spun cotton fragments of cloth and rope (Figure 5.9 and Figure 5.10). Some of the rope is Z-plied, which was common on the north coast in Chimu times (Gary Urton, personal communication). Only three camelid fiber textile fragments were recovered and two of these came from the same context, a small bundle with bones found in Camera 3 of Unit 5 (Figure 5.11). Two conglomerations of hair, vegetal material, cotton, and camelid fiber were also encountered on the site (Figure 5.12). We also recovered the burnt textile with small bones inside that was part of the series of offerings found in Unit 2 (see Figure 4.29) In general, textile remains were not abundant, suggesting that they do not preserve well at Licapa II.


**Figure 5.9: S-spun cloth fragment.**


**Figure 5.10: S-spun rope fragments with final Z-ply.**

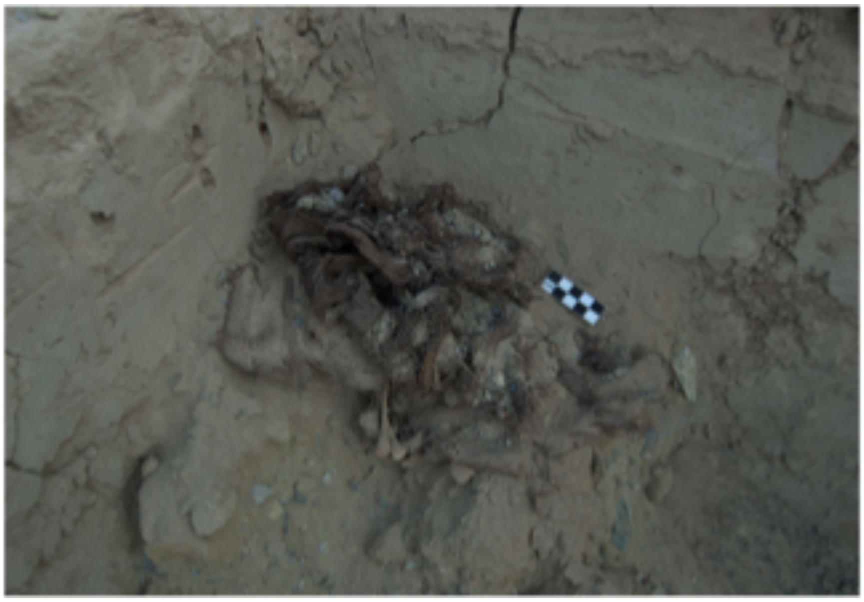

**Figure 5.11: Bundle of textiles with bones found in Camera 3 from Unit 5.**


**Figure 5.12: Conglomeration of vegetal material, cotton, camelid fiber and hair.**

Lithics

Lithics were also lacking at the site. A total of 42 lithic materials were recovered. This includes debitage, chalk, pumice, tools, polished stones and inlays, pendants, and beads (Table 5.3). The most fascinating lithic we recovered was a Paiján projectile point. This was found in the upper levels of Unit 3 and potentially shows that someone in the more recent past had an interest in collecting ancient objects (Figure 5.13). Other lithics include finely polished pendant in the shape of a strombus shell seen in Figure 4.63 and two highly polished stones, one black and one white, that when put together form a small cylinder (Figure 5.14). These were potentially inlay pieces from an elaborate ceramic vessel, figuring, or metal object.


**Figure 5.13: Paiján Point.**


**Figure 5.14: White and black polished cut stones.**

**Table 5.3: Spreadsheet of lithic data for the site.**

| LITHIC OBJECTS | | | | Z10 | Unit 2 | | | Unit 1 | Unit 4 | | | Unit 5 | Unit3 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 4E | 5 | 5B | 2 | 1 | 2 | 4 | 1 | 1 | 3A | 3C | 3E | 5 | 5C | 7 | Canal 2 | # | % |
| WORKED INSTRUMENTS | Debitage | Cores | | | | | | | | | | | | | | | 1 | | | | 1 | 2.38 |
| | | Flakes | hard hammer | | | | | 1 | | | 1 | | 2 | | | 1 | | | | | 5 | 11.90 |
| | | | soft hammer | | 1 | | | | | | | | | | | | | | | | 1 | 2.38 |
| | Ordinary Utensils | a posteriori | worked flake | | | | | | | | | | | | | | 1 | | | | 1 | 2.38 |
| | | Scrapers | | 1 | | | | | | | | | | | | | | | | | 1 | 2.38 |
| | | | | | | | | | | | | | | | | 1 | | | | | 1 | 2.38 |
| | | Paiján point | | | | | | | | | | | 1 | | | | | | | | 1 | 2.38 |
| | | Others | | | | | 1 | | | | | 1 | | | | | | | | | 2 | 4.76 |
| COBBLES | Percussion stone | | | | | | | | | | | | | | | | | | 2 | | 2 | 4.76 |
| | Non-percussion stone | | | | | | | | | | | | 1 | | 1 | | | | | | 2 | 4.76 |
| | Batán | | | | | | | | | | | | 1 | | | | | | | | 1 | 2.38 |
| | Others | | *quartz* | | | | | 1 | | | 1 | | | | | | | | | 1 | 3 | 7.14 |
| | | | *pumice* | | | | | | 1 | | | | 5 | | | | | | | | 6 | 14.29 |
| | | | *chalk* | | | | | | | 1 | | | 1 | | 1 | | | | 1 | | 4 | 9.52 |
| POLISHED OBJECTS | finished | tools | cutting | | | | | | | | | | | | | 1 | | | | | 1 | 2.38 |
| | | | hammering | | | | | | | | | | | 1 | | | | | 1 | | 2 | 4.76 |
| | | Ornaments | beads | | | 3 | | | | | | | | | | | | 1 | | | 4 | 9.52 |
| | | | pendants | | | | | | | | | | 2 | | | | | | 1 | | 3 | 7.14 |
| | | | others | | | | | | | | | | | | | | | | 1 | | 1 | 2.38 |
| | | | *TOTAL/LEVEL* | 1 | 1 | 3 | 1 | 2 | 1 | 1 | 2 | 1 | 13 | 1 | 2 | 3 | 2 | 1 | 6 | 1 | 42 | 100.00 |
| | | | *TOTAL/UNIT* | 1 | 5 | | | 2 | 4 | | | 1 | 28 | | | | | | | 1 | | |
| | | | *TOTAL/ÁREA* | 1 | 7 | | | | 5 | | | | 29 | | | | | | | | | |

Metals

Only a total of 27 metal objects were found. Many of these fragments were corroded and indistinguishable, however, we did find a few small placards seen on the costumes of priests in ceramic iconography and also found on garments in the tombs of the Lord of Sipan, Señora de Cao and the priestesses at San José de Moro (Alva and Donnan 1993; Mujica 2007). Notably, copper was placed in the mouth and the hands of the child buried in Unit 3. Copper has been found inside the mouths of many elite and non-elite Moche burials (Millaire 2002). It should be noted, however, that the female in Unit 2 did not have copper in her mouth.

Other Objects

Another artifact to note is a wooden object that may have been used to fix and make fishing nets found in Unit 5 (Figure 5.15). In modern coastal Peru wooden objects are used for this purpose (Figures 5.16). I spoke with some of the local fishermen in the seaside town of Huanchaco just to the north of Trujillo about this specific object and they offered the suggestion that it could have been used for this purpose. It could have also been used in textile production. Another object of interest was an ornate bone comb found in the *cuy* pen in Unit 3 (Figure 4.63). Overall, lithics, metals, and other materials, such as wood and bone tools made up a very small percentage of the recovered materials.

**Figure 5.15: Wooden object, possible a tool for making fishing nets or other textiles.**

**Figure 5.16: Fisherman mending a fishing net using wooden tools.**

## Summary of Subsistence, Climate, and Economy at Licapa II

Overall, the subsistence patterns exhibited at Licapa II are not unlike patterns seen at other Moche sites. The people at Licapa II had a diverse diet composed of wild and domestic plants. Camelid and *cuy* protein, along with fish and mollusks were the main source of protein. However, the exorbitant amount of camelid remains suggests that feasting may have been an important activity at Licapa II.

Aside from being a food source, mollusk data can also suggest climatic patterns. Shell species distribution at Licapa II show that there may have been periods of increased ENSO events throughout the duration of the occupation of the site.

Mollusk data in the form of *Spondulys* and *Chicone*, as well as the presence of monkey bones suggests that the people of Licapa II were engaged in long distance trade. This is corroborated with the ceramic data. One possibly Chancay ceramic fragment, a highland Cajamarca sherd and a double spout and bridge vessel with central coast characteristics all suggest that there was long distance communication occurring between the people of Licapa II and in other regions outside the Moche realm. These objects will be discussed in the following chapter.

There in not a lot of evidence of textile use at Licapa II, potentially because the preservation of these materials is not great. Metals also do not preserve very well. The metal objects we did encounter were corroded and indistinguishable. Wooden objects were also uncommon. Apart from preservation issues, the lack of these artifact classes at Licapa II can be attributed to the contexts excavated at the site. Metals and textiles are found mainly in tombs, which were not found in abundance at the site.

Overall, the data from Licapa II show that this site was using materials very similar to other Moche sites from the same time period. This suggests that comparisons between the ceramic assemblage and architecture from Licapa II and other Moche sites are appropriate. In the following chapter I review the ceramics found at Licapa II and I present my petrographic analysis of ceramics from this site and other Moche sites.

# CHAPTER 6

## CERAMIC ANALYSIS

In this Chapter I examine the ceramics found at Licapa II. Ceramics are the most ubiquitous material found on the site and are the best proxy for understanding how the people at Licapa II interacted with people at other Moche sites. Below I review Moche ceramic technology and our current understanding of chronology in relation to style. I then examine the ceramics from excavations and surface collections at Licapa II. Finally, using petrography I compare ceramics from Licapa II to other Moche sites.

From this analysis I show that there was a shift in the ceramic patterns at Licapa II around A.D. 600. The early phase (pre A.D. 600) was characterized by a local ware that I call Licapa A. Moche IV and V wares dominate in the later phase (post A.D. 600). In this chapter I also demonstrate that the Moche IV/ V distinction does not strictly relate to time. Finally, from the results of my ceramic and petrographic analysis, I present evidence that may in the future help show that the Moche V, and possibly the Late Moche style, originated in the northern Chicama Valley.

### Moche Ceramics

In our investigations at Licapa II we collected 7,475 diagnostic sherds from the five excavation units and 69 surface collection areas. Diagnostic sherds were defined as rims, bases, decorated body sherds, molds, instruments and figurines. Entire vessels were recorded the same way as sherds, but noted that they were complete. We only recovered five complete jars, three lightly fired miniature vessels, or *crisoles,* and the goblet. Other vessels were more fragmentary, yet their forms were identifiable. These included the stirrup-spout and bridge vessel from Unit 5, the basin and two jars from the offering in Unit 2, a plate from Unit 2, and eight broken miniature bottles from Huaca A. The remainder of the sherds collected was composed of individual fragments or a series of two or three fragments that could be glued together. All non-diagnostic sherds were left on the site. For each of the 7,475 sherds, 39 attributes were recorded (Appendix B.1), which will serve for many future analyses. However, for the purpose of this dissertation, I am mainly interested in the kinds of wares present and their spatial distribution, both vertically and horizontally. Identifying the different kinds of wares across the site can help understand the function and/or use phase of the different sectors. Vertical deposition can demonstrate changes in the assemblage through time. I also performed a preliminary petrographic study of ceramics from Licapa II and four other Moche sites, Huacas de Moche, El Brujo, San José de Moro and Cerro Mayal to understand aspects of the nature of production, exchange, emulation, and invention. This study will be discussed below.

Moche ceramics can be broken down into three categories: fine wares, mid-grade ceramics[7], and utilitarian or domestic wares. In my analysis of Licapa II ceramics I

[7] The term "mid-grade" is not well defined. Swenson (2004:702) uses the term to characterize non-fineline ceramics used in a ritual context. Quilter (2010) uses the term "serving ware" to describe the mid-grade category and notes that serving wares include the Castillo series (see Chapter 2) and other vessel forms used to serve food such as spoons and bowls. Castillo (2001:316) uses the term to refer to ceramics that are "neither fine nor domestic" based mainly on their form and decoration. At San José de Moro, these ceramic types include face-neck jars (jars with mold-impressed Moche iconography on the neck), flasks with small handles on the sides of the neck, open-mouth jars, *crisoles* (or miniature slightly fired jars), and small flat based jars with flared necks and stream-line bodies. In other valleys there are likely other types of "mid-grade" wares, since the types can vary based on the corpus of ceramics found at each site. My study does not focus on "mid-grade" ceramics from Licapa II because of the flexibility of the definition and because so few complete vessels were found to build a corpus of vessel types for this site.

examine the utilitarian wares found on the site, but mainly focus on the fine wares because they are directly comparable to fine wares found at other sites.

Utilitarian Wares

Utilitarian ceramics are crudely constructed earthenware vessels made with slabs or coils of clay. They were hand-made by hand modeling or using the paddle and anvil technique. These ceramics tend to have thick walls with large aplastic inclusion or temper. They were used for food preparation, serving, and storage and mainly include large storage vats (*paicas*), *ollas* (pots), and jars.

*Paicas,* or *tinajas,* are large vat-like ceramic vessels and were used for water storage and for storing and processing other comestibles. They were also used for preparing and storing *chica* (corn beer). *Paicas* can be up to 2 meters tall and have walls as thick as 3 cm (Swenson 2004).

*Ollas* are short-necked (0-4 cm rim length)[8], or neckless vessels with large openings, globular bodies and flat bases. These were used for processing, preparing, and cooking food. Jars (*cantaros*) are globular vessels with medium to tall necks (4 cm or longer) and restricted openings. Jars can have ring, pedestal, or flat bases. These vessels were used for a variety of purposes including the preparation, cooking, storage, and serving of food and liquids (Swenson 2004). In my analysis I consider face-neck jars utilitarian wares, mainly because of the quality of the paste and the non-funerary nature of the contexts I excavated at Licapa II. However, some scholars consider these to be

[8] I used a modified version of the Huaca de la Luna Project ceramic analysis classification system to determine the difference between the forms and the range of rim lengths for *ollas* vs. jars. However, in my analysis jars can have rim lengths of less than 4 cm if the overall diameter of the jar is less than 7 cm. Also, many of the sherds were missing the neck, so it was not always straight forward whether or not the rim was from an *olla* or a jar. In this case, jar was used as the default form.

“mid-grade” wares (see Footnote 1). Most Moche utilitarian ceramics fall into these categories, although there are some other forms such as graters[9].

Some utilitarian ceramics were decorated. Surface texturing (incising, excising, perforating, appliqués and hand modeling) was the most common type of decoration and was used to create faces and other designs on the necks of jars. Molds were also used for the appliqué faces on utilitarian face-neck jars.

Utilitarian ceramics make up the largest percentage of ceramics found at most archaeological sites with domestic components. However, utilitarian wares are also common in burials (Castillo 2001) and were used for serving and preparing food and drink during rituals and ceremonies.

<u>Fine wares</u>

Fine wares are elaborately made ceramics with highly refined and processed clays resulting in vessels with thin walls composed of pastes with small aplastic inclusions. Fine wares were produced with molds or hand-made. Moche people decorated vessels using a variety of techniques, including surface texturing, slip painting and burnishing. Slip painting was used for fineline ceramic painting, which is the application of paint using a thin brush to create elaborate scenes, and other painted wares. The paint was made by creating a slurry of mineral rich clays and water that could be applied to the vessel. Moche paints tend to be mostly reds and creams. The red paints were made with a mix of iron oxides and magnesium, whereas the cream was derived from kaolin in some

[9] Graters (*ralladores*) are vessels with large, sharp ridges or grooves incised into their interiors. They are generally bowl-shaped in form and it is believed that they were used to grind corn and other fibrous materials. However, restricted neck jars have been found with ridges on the interior, which suggests that the ridged may have also served another purpose. Only 3 possible fragments of graters were found at Licapa II, suggesting that intense food processing may not have been an activity performed in the core of the site or that food was prepared using different tools.

early cases, and in later examples silica, aluminum, and calcium rich clay sources were used (Chapdelaine et al. 1997; Rohfritsch 2006, 2010). Burnishing, another finishing technique, involves rubbing the surface of a leather hard vessel with a polished stone or bone tool to push the temper below the surface to make it smooth (Donnan 1992). When a vessel is burnished to a high degree to create a shiny gloss, this is called polishing and was reserved for only the finest vessels.

After shaping and decorating the vessels were fired in kilns. The Moche used kilns to produce both oxidized and reduced vessels. Oxidizing allows oxygen into the kiln during the firing process and produces buff to dark orange-red colored ceramics. Reducing eliminates the oxygen and produced gray to black ceramics. As far as we know the Moche used open-air pit kilns dug into the ground and lined with cane or other grasses. The kilns were then filled with leather hard ceramics and covered firewood, broken fired ceramics and a layer of llama dung (Bawden 1977; Russell et al. 1998; Shimada 1994:197). While other kiln types were definitely possible, none have been located. It is also possible that kilns were not used at all for the firing of some ceramics.

Fine ware forms include *floreros*, or flaring rim bowls, stirrup-spout bottles, single handle bottles, bowls, plates and dippers, also known as “maize poppers” (*cancheros*). They also can include figurines, rattles, trumpets and whistles (Russell et al. 1998). Stirrup spouts are the most prevalent of the fine wares and are the most ubiquitous that carry the symbols of Moche religious ideology. These bottles can be globular in shape (see Figure 3.2). They can also be modeled sculpture bottles, which are mold-made vessels with three-dimensional imagery representing objects, animals, vegetables, supernatural beings, and humans, such as warriors and shamans. Some sculpture bottles contain complex modeled scenes, such as deer hunting scenes, mountain top sacrifices, and both human and supernatural being engaged in sexual acts (see Bourget 2006 and Quilter 2010b for examples of these different scenes). A common sculpture bottle form is the portrait-head vessel, which may represent actual individual Moche rulers or elites (Donnan 2004).

Today fine wares are mainly found in burial contexts. Quilter (2010b:41) suggests that they were used to convey messages about the wealth and prestige of the owner during his/ her life. Bourget (2006) believes that they were exclusively used as burial offerings, whereas other scholars, such as Donnan and McClelland (1999) suggest they had use in life. Donnan and McClelland (1999:19) suggest that fine wares were used in ceremonial settings, but also in elite households and could have been used to serve and store *chicha.* Since many fine wares were found in non-funerary settings at Licapa II, I also contend that they were used in rituals and ceremonies, as well as elite residential contexts and not exclusively reserved for burials.

*Fineline Painting*

Globular stirrup-spout vessels, as well as *floreros,* dippers, and single handle bottles often contain fineline painting. Sculpture vessels can also have fineline painting. Donnan and McClelland (1999) examined fineline painting on vessels from a corpus of over 160,000 photographs of Moche objects from museums and private collections throughout the world. This collection is known as the Moche Archive and was housed at the University of California Los Angeles until recently when it was moved to Dumbarton Oaks in Washington DC. Their work focused on creating roll out drawings of the fineline paintings from photographs of three-dimensional vessels. They were then able to examine this art in relationship to the Larco five phase sequence. Because of this work, individual sherds found in the field can now be matched to scenes from known phases. This allows archaeologists to know the phase of ceramic sherd even when the spout is absent. Overall, their work helped to refine the Larco sequence of fineline vessels, since now the five phases could be linked not only to changes in the form of the vessel, but also changes in the art.

Donnan and McClelland (1999) determined that Moche I and II are nearly indistinguishable in the Moche Archive corpus, thus they refer to the style as Moche I/II. This fineline style is derived from earlier Salinar styles and is restricted to stirrup spout vessels (no other vessel forms). Most of the vessel chambers are oblate, but some are spherical, cylindrical and angular (see Donnan and McClelland 1999:25-27). The spouts on these vessels have thick reinforced lips. Most Moche I/II vessels consist of thick lined imagery that represents humans, animals, and supernatural creatures in profile and frontal views. The subject matter is limited and mostly depicts complex geometric motifs, and animals, mostly lizards. Some supernatural figures are present. These include a dragon character and versions of the "Decapitator," a supernatural being who is shown holding severed heads (see Donnan and McClelland 1999:34-37). Humans are rarely depicted in Phase I/II, but there is one example of warriors parading captives. However, in general, the depiction of activities is limited in Phase I/II.

There is a much larger corpus of Phase III fineline materials with more actions and figures portrayed than there is for Phase I/II. In Phase III fineline paintings not only appear on stirrup spout bottles, but also flaring bowls (*floreros*), dippers (*cancheros*), and jars. The stirrup-spouts chambers tend to be taller and more spherical than the Phase I/II vessels and the spouts flare and have a reduced lip. Phase III lines are much thinner and the scenes are much more detailed and complex. The depictions are more naturalistic; they show motion, and figures interacting. Some themes include Ceremonial Badminton, the Coca Ceremony, and Ritual Runners, which continue to Phase IV (see Donnan and McClelland 1997:64-71), and the Warrior Narrative, described in Chapter 3.

Seventy percent of the Moche Archive corpus is from Phase IV, so it is natural that there are more forms, themes, and variety identified from this phase. Stirrup-spouts remain the primary vessel form. The chambers continue to be mainly spherical in shape but they are much larger than the phase III vessels. The spouts are larger with parallel walls. There are also a great number of *floreros,* dippers, and jars with fineline painting during this phase. Three-dimensional sculpted vessels with finelines, though apparent in Phase III, become more prevalent in IV. There are also other very complex forms, such as false neck jars with a tube passing through the chamber, architectural vessels and whistling vessels (Donnan and McClelland 1999; Wiersema 2010).

Phase IV lines are very thin and there are more activities and figures depicted in the scenes. More human themes become popular, such as hunting (deer, birds, sea lions, snails), dancing, musical processions dismemberment of human bodies, and females are portrayed for the first time. Artists also animated inanimate objects, such as war clubs and weapons bundles for the first time (Quilter 1990). The Warrior Narrative continues to become more complex and more prevalent. Additionally, the Sacrifice Ceremony, where the blood of the prisoners is presented to specific characters, including the Warrior Priest, the Bird Priest, and the Priestess, is shown for the first time. Moche IV ceramics are mainly found south of the Pampa de Paiján and are quite rare in the Jequetepeque Valley and north.

Moche V fineline painting was until recently the least understood and most easily confused. At the time of their writing, Donnan and McClelland (1999) described Moche V as any fineline ceramic that has the tapered stirrup-spout described by Larco. This style of spout is found in both the northern and southern regions, but on three distinct vessel types.

First, the tapered spout is found on a form of ceramic that has fineline painting similar to Moche IV. I refer to this style as “Figurative Moche V.” Frequently, the forms of the bottle, as well as the spout are distinct from Moche IV in that they are more ovoid in shape and have flat bases. In general, Figurative Moche V scenes are more tightly packed than scenes on Moche IV vessels, but this is not always the case. When the art is similar, the vessel shape and spout are the only distinguishing factor. Since finding complete vessels at archaeological sites is rare, with only a small fragment it is sometimes very difficult to distinguish the painting style of Figurative Moche V vessels from Moche IV vessels. Although difficult to determine from a small sherd, the subject matter changed between IV and V. Most notably, the depiction of the Sacrifice Ceremony as it was presented in IV and described in Chapter 3 ceases, but aspects do persist. It is now seen as part of the Burial Theme, the Priestesses in the boats sometimes are carrying goblets, and goblets are also seen being passed to single individuals under gabled roofs (Donnan and McClelland 1999). Based on an analysis of the Larco museum collection, as well as my reconnaissance in the Chicama Valley, it is apparent that this ceramic style is mostly found in the northern Chicama Valley. However, it is also found in the southern Jequetepeque Valley (Swenson and Warner 2012; Ubbelohde-Doering 1983), and in small quantities at Galindo (Bawden 1977; Lockard 2005) and Pampa Grande (Johnson 2010; Shimada 1994).

The second ceramic type with the tapered spout is what I refer to as Geometric Moche V. The vessel form (ovoid chambers, tapered spouts) are very similar to the Figurative Moche V forms. Geometric Moche V wares were executed with fine lines and the decoration tends to cover the entire vessel. Gregory Lockard (2011)recently identified and classified the different geometric motifs found at Galindo, Pampa Grande, and the northern Chicama Valley, around Licapa II. Both Geometric Moche V and Figurative Moche V make up the Moche V tradition.

It should be noted that Moche V painting is not limited to stirrup-spout vessels. *Floreros* are also common in this phase. Many Figurative Moche V *floreros* have stepped rims, which makes them recognizable from Phase IV *floreros*, but this is not always the case. Moche V *floreros* are also taller and have narrower bases than the Moche IV variety. Geometric Moche V *floreros* also have stepped rims, but also have simple rims as well.

Finally, the tapered spout is seen on a style of fineline now known as "Late Moche," – a northern phenomenon – concentrated in the Jequetepeque Valley around San José de Moro (Castillo 2001; Castillo and Donnan 1994a; McClelland et al. 2007). Late Moche is distinct from Moche V and they should not be confused. First, the vessel shapes are different. Although some are spherical, many have curved or angled equators that divide the vessel chamber into two halves. Most vessels also have ring bases. *Floreros* are not as prevalent in the Late Moche tradition and are primarily found south of the Pampa de Paiján.

Late Moche fineline paintings are densely packed scenes. The color of the lines ranges more from dark red to brown rather than the more common bright red to dark red seen on Moche IV and Moche V vessels from the southern region. Popular motifs include the Priestess from the Sacrifice Ceremony seen in a reed boat. These ceramics are no longer referred to as Moche V; rather they are exclusively called "Late Moche" or the Moro style. I refer to them as Late Moche.

Just prior to the collapse of the Moche we see other forms with fineline painting and Moche motifs such as double spout and bridge forms typical of Wari and later Lambayeque. A higher number of polychrome vessels influenced by Wari also existed.

Although fineline painting is not the only diagnostic characteristic of Moche ceramics, it plays an important role in understanding relationships between Licapa II and other sites. Foreign and local wares found at Licapa II help clarify the role of this center in the Moche world. Below I describe the ceramics found at Licapa II and their contexts.

**Licapa II Ceramics Overview**

Licapa II is a unique site since a variety of ceramic styles are found there. These include a local Licapa II Huaca A style (Licapa A), Moche IV, Figurative and Geometric V, and Late Moche fineline fragments. From the analysis of the Licapa II assemblage we can begin to ask a number of questions related to the production and trade of these vessels and what this can tell us about political and religious affiliations. The domestic and ceremonial nature of the site also accounts for the numerous utilitarian wares found there. Therefore, by evaluating the Licapa II assemblage we can start to determine the different functions and phases of specific sectors of the site to begin to formulate its role in the larger Moche world.

Licapa II Ceramic Forms

*Utilitarian Ware Forms*

Of the 7,475 sherds, 3,909 are from utilitarian jars, *ollas*, and *paicas* (Table 6.1). The majority of the utilitarian ceramic found at Licapa II can be classified as Castillo Plain, Valle Plain, and Virú Plain using the Virú Valley project system (Strong and Evans 1952). The average rim diameter of the utilitarian jars at Licapa II is 10.54 cm, with the smallest jars having a diameter of just 3 cm and the largest of 37 cm (Table 6.2). This large jar could almost be considered a *paica*, but it was shaped like a jar. Jars at Licapa II have rims that are convex, straight, everted, expanded, and carinated, which is similar to the jar rims found at other Moche sites (Gamarra and Gayoso 2008). The distribution of these rim types in the excavations will be discussed below (see Appendix B.2 for illustrations).

The average rim diameter of the utilitarian *ollas* on the site is 11.09 cm with the smallest measuring 7 cm in diameter and the largest 29 cm. *Olla* rims were mainly convex, but some carinated, and platform rims were found on the site (see Appendix B.2 for illustrations).

The average *paica* diameter at Licapa II is 32.13 cm. *Paica* rims are either simple, which has no lip, or reinforced, where the lip is slightly thicker than the body of the vessel (see Appendix B.2 for illustrations).

**Table 6.1: Distribution of utilitarian ceramic forms at Licapa II.**

| Vessel Type | Count |
|---|---|
| Jar/ Utilitarian | 3184 |
| *Olla*/ Utilitarian | 503 |
| Paica | 222 |
| **TOTAL** | **3909** |

**Table 6.2: Mean diameter of rims at Licapa II.**

| Vessel Type | Mean Rim Diameter |
|---|---|
| Jar/Utilitarian | 10.54 |
| *Olla*/ Utilitarian | 11.09 |
| Paica | 32.13 |

*Fine Ware Forms*

Of the 7, 475 sherds, 1,948 of these are from fine wares, which include bottles, fine jars, fine *ollas*, dippers, *floreros,* as well as serving wares (bowls, basins, cups, plates, spoons and lids). Fine wares from vessels of an undetermined form were also found at the site. These could have been from bottles, jars, dippers, bowls, or other forms (Table 6.3). It should be noted that fine wares can vary significantly in their quality; this study makes the distinction between utilitarian and fine and does not consider “mid-grade” ceramics.

**Table 6.3: Fine ware vessel forms from Licapa II.**

| Vessel Type | Count |
|---|---|
| Basin | 16 |
| Bottle | 1065 |
| Bowl | 150 |
| Cup | 9 |
| *Florero* | 241 |
| Jar/Fine | 70 |
| Lid | 8 |
| Plate | 11 |
| Dipper | 19 |
| *Olla*/Fine | 27 |
| Spoon | 16 |
| Undetermined/Fine | 316 |
| **TOTAL** | **1948** |

Bottles were the most frequently found fine ware on the site. This is expected since these are the most common fine Moche ceramic in general. *Floreros*, however, make up a large percentage of the assemblage compared to other Moche sites. Two hundred forty one fragments were found, many of these decorated with Moche IV and V iconography. Of the 14,859 Moche ceramic vessels in the Larco Museum collection, only 349 of these are *floreros*. The exorbitant number of this type of sherd compared to other vessel types at Licapa II is curious since the exact function of the *florero* remains unknown. It has been suggested that they were used as vessels to hold and collect water, or potentially as a chamber pot. If they were for collecting water, then they may have been used in ceremonies associated with the canal that runs through the middle of the site. It is also possible that these were ornate serving wares. Evidence suggests feasting was an important activity at Licapa II; the high number of *florero* fragments could relate to this activity.

*Other Vessel and Ceramic Forms*

The remaining 1,616 fragments belonged to instruments, figurines, tools, molds and other unique items, such as a single mask fragment. We also collected 445 non-diagnostic sherds and 952 undetermined sherds, which included mainly bases and handles from jars, *ollas,* or bottles (Table 6.4).

**Table 6.4: Other ceramic forms at Licapa II.**

| Vessel Type | Count |
|---|---:|
| Figurine | 69 |
| Instrument | 74 |
| Miniature | 18 |
| Mold | 6 |
| Tool | 5 |
| Other | 47 |
| Undetermined | 952 |
| Non-Diagnostic | 445 |
| **TOTAL** | **1616** |

<u>Licapa II Ceramic Decoration</u>

Of the 1,948 fine wares, 1,432 are decorated and can be classified into 11 categories. (1) Figurative designs, containing identifiable animate and inanimate objects such as humans, supernatural beings, plants, animals and objects; (2) Geometric Moche V, containing repetitive geometric designs; (3) red lines on cream background, and (4) painted areas, either of which could possibly be figurative or geometric, but the design is not distinguishable; (5) cream slip lines on a red background; (6) sculpture bottles distinguished by their irregular forms; (7) black ware; (8) negative painted vessels; (9) fine incised, excised, perforated, and hand modeled vessels (IEPH); (10) geometric designs that are not fineline Moche V, and (11) unique vessels (Figure 6.1).

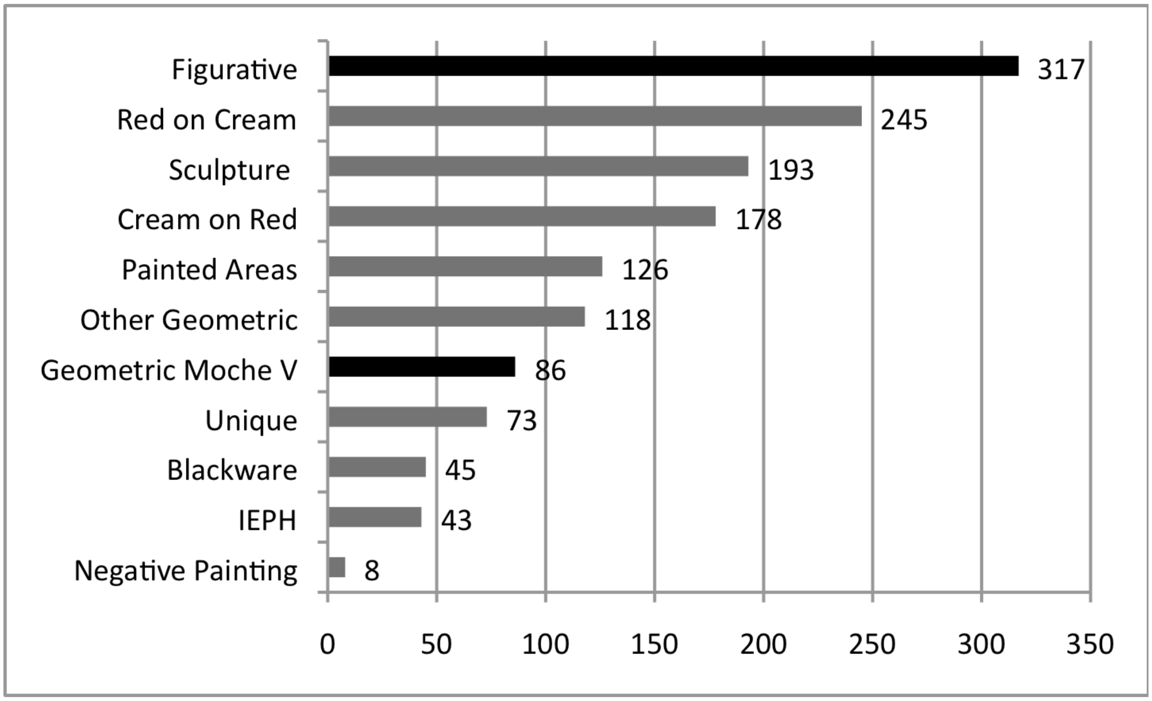


**Figure 6.1: Ceramic decoration at Licapa II.**

*Moche Finelines at Licapa II*

Ceramics with the most diagnostic significance for this study are finelines, both figurative and geometric, since they are abundant on the site and have identifiable features that have been used to denote temporal and stylistic differences throughout the Moche world. Vessel forms include bottles, potentially dipper bodies, and *floreros.* The majority of the fineline ceramics found on the site were Moche IV and Figurative and Geometric Moche V, but roughly a dozen Late Moche finelines were also collected (Figure 6.2, Figure 6.3 and Figure 6.4).

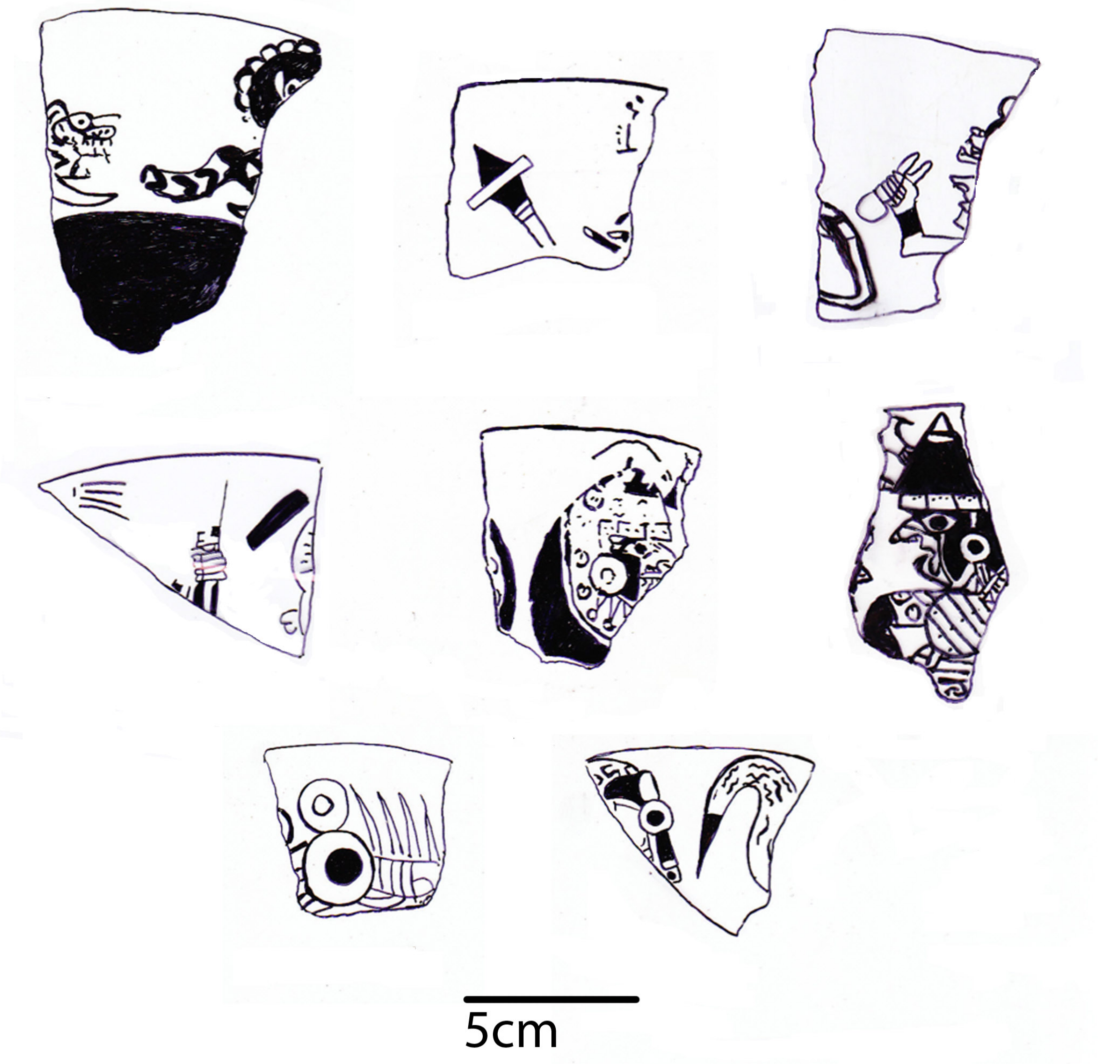


**Figure 6.2: Fineline sherds from *floreros* from Licapa II.**

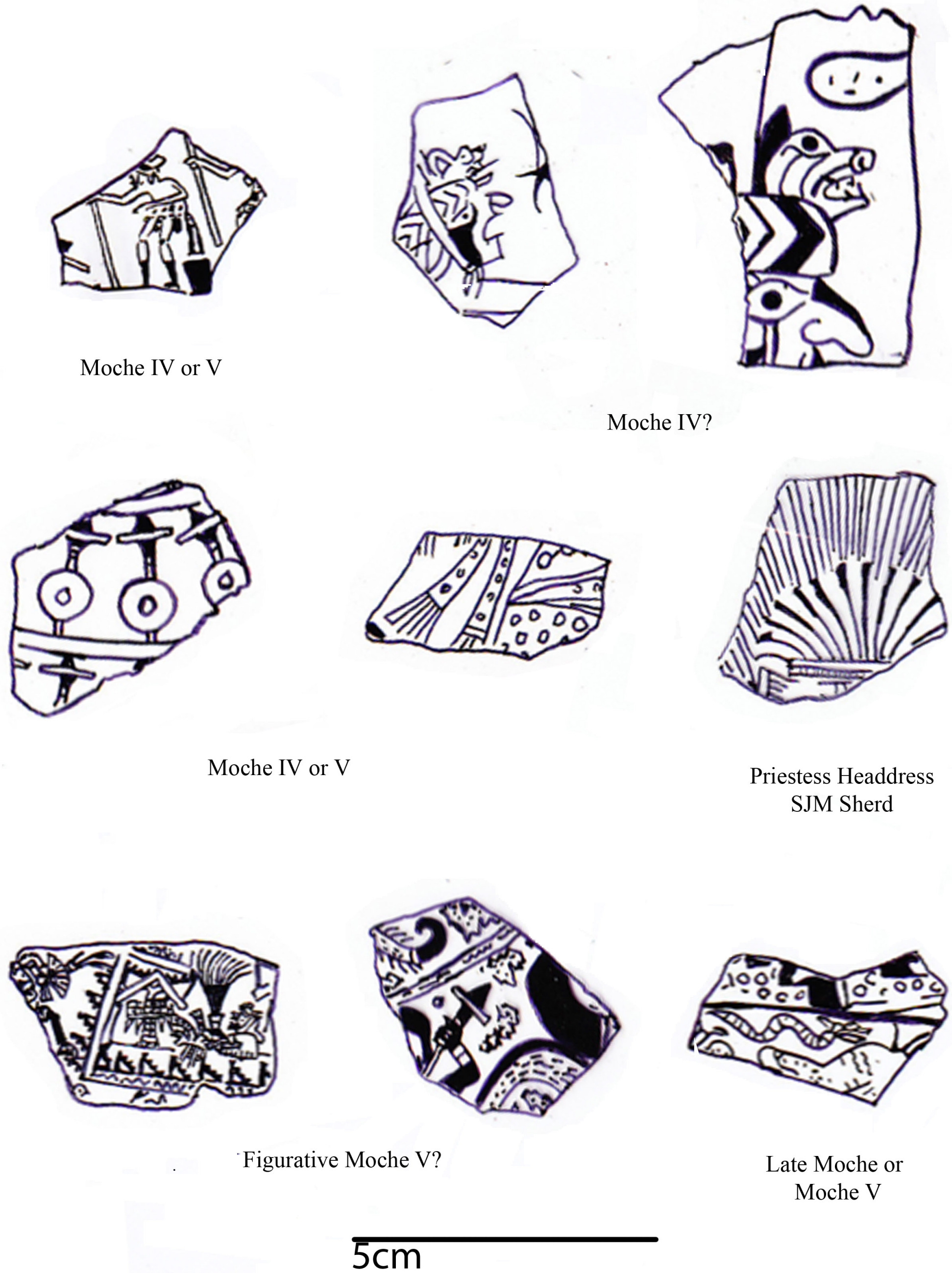


**Figure 6.3: Figurative fineline ceramics from bottles in the Moche IV, Moche V, and Late Moche styles from Licapa II.**

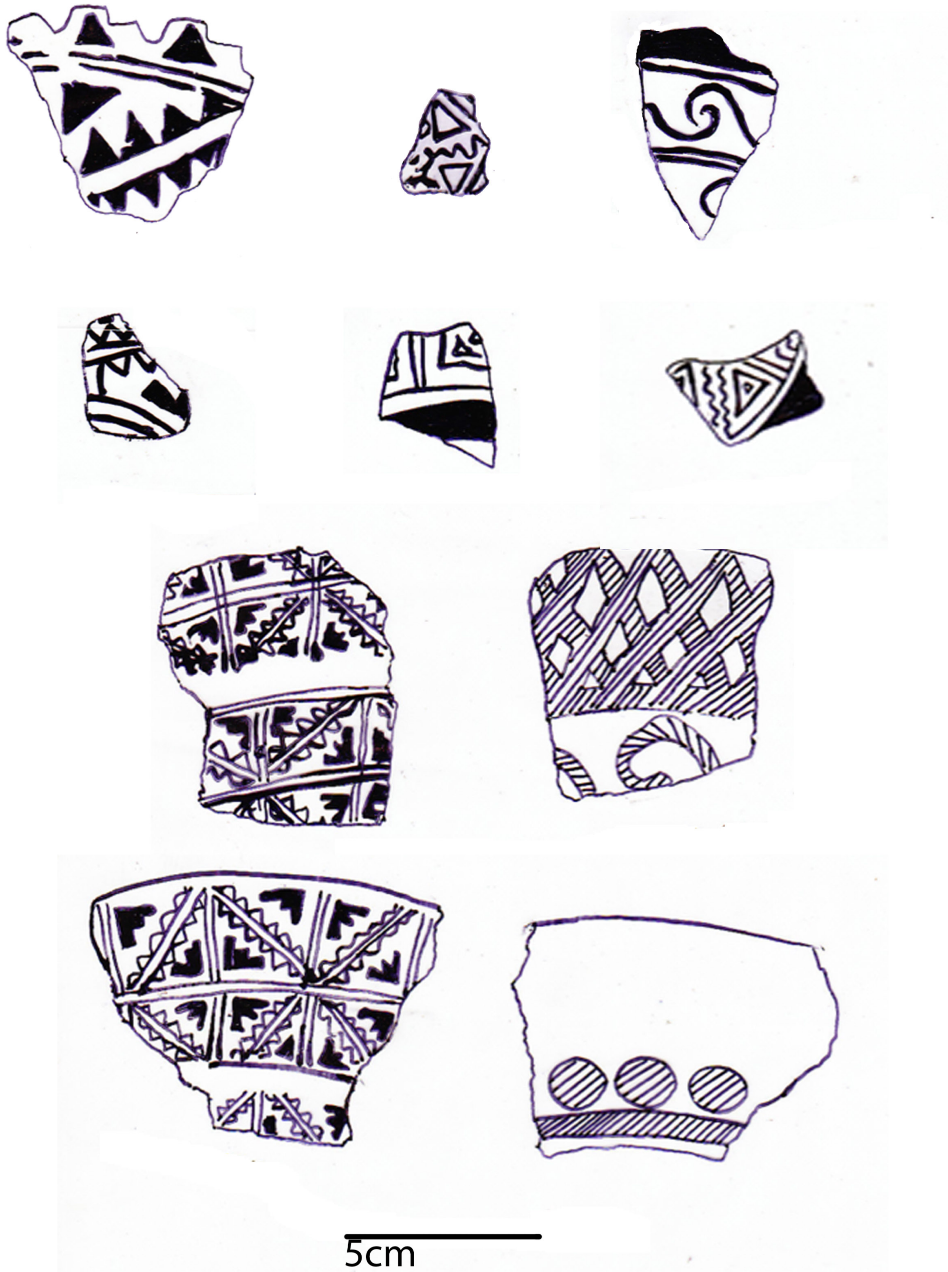


**Figure 6.4: Geometric Moche V finelines from bottles and *floreros* from Licapa II.**

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Three hundred and twelve of the decorated ceramic sherds recovered contain figurative designs (either Moche IV or V) (see Figure 6.2 and Figure 6.3). Of the figurative Moche sherds, 223 were from bottles. Without the entire vessel, we do not know for certain if they belonged to the Moche IV or V phase. Distinguishing Moche IV and V *floreros* apart is also difficult. The major difference is that Moche V *floreros* can have a stepped rim, but this is not always the case. At Licapa II we found examples of clearly Geometric Moche V designs on *floreros* without stepped-rims (see Figure 6.4).

In the excavation and surface collection 300 stirrups and spouts were recovered from the site. The majority of these could not be assigned any stylistic or temporal designation. We frequently found a fragment of the stirrup and not the spout. The stirrups themselves are generally shaped differently in these two phases. Moche IV stirrups are more rounded, and Moche V are more angular, but this is not always the case. Furthermore, the fragmented nature of the sherds made the phase hard to distinguish. Of the spouts and stirrups that are diagnostic, 21 are Moche V; 25 are probably Moche V; 16 are Moche IV and 3 maybe Moche IV. Therefore, the majority of the identifiable stirrups and spouts at Licapa II are Moche V. However, we may be putting too much emphasis on the shape of the stirrup and spout as some sort of marker, be it temporal or stylistic, and ignoring other important patterns. The same might be said about stepped rims on Moche V *floreros.*

The presence of Moche V figurative and geometric ceramics, along with Moche IV and Late Moche sherds at the same site is quite uncommon. To date, no other site has been excavated with this combination in such quantities, or that raises such questions about identifying the difference between Moche IV and V contexts from only fragments.

Ceramic data from Licapa II first suggests that we need to further reevaluate the temporal nature of the Larco phases, and secondly, that Licapa II is an excellent location to do so. Therefore, from excavations and surface collection at Licapa II we can learn about the interface between these styles and deduce potential patterns associated with their function and phase of use.

Below I discuss the fine and utilitarian wares found in both the excavated contexts and the surface collection. I keep these two analyses separate because we learn different things from them. Excavated data tell us about changes in the function and use of a site through time on a small and detailed scale. Surface data show larger-scale patterns and suggest if different parts of the site were used for different purposes. I admit that special attention is given to Moche diagnostic fine wares and less to the utilitarian wares. This is mainly because direct comparisons can be made between fine ceramics from Licapa II and other centers, which allows us to understand how Licapa II was connected to the Moche world.

## Excavation Results

### Domestic wares

Utilitarian wares from excavated contexts demonstrate that food preparation, and storage was important close to the major monuments and throughout all the occupation levels. Utilitarian ceramics were found in all the excavation units. However, much less were found in Units 1, 2, and 5 because these excavations were on the huacas themselves. Since there was no clear domestic association to the utilitarian sherds on the huacas, it is not clear how and why they were deposited there. It is possible that they were brought to the huacas with food or beverages in them to be used in non-domestic contexts.

Only Units 3 and 4 are compared here because they have good stratigraphic control and in the excavations of these units there was evidence for cooking, such as hearths, food preparation, and storage. Therefore, the context of the utilitarian ceramics found in Units 3 and 4 is much clearer than the context of these wares on the huacas. Utilitarian wares are less abundant than fine wares in the core in general and make up 31% of the Unit 3 assemblage and 43% of the Unit 4 assemblage. However, the numbers could be skewed because of our sampling strategy of only collecting diagnostic sherds. Nonetheless, these numbers demonstrate that although preparation and storage was happening, consumption using fine serving vessels was likely more important in the core. However, as noted in Chapter 3, complete *paicas* were found in Units 3 (three complete vessels) and Unit 4 (four vessels) that were not collected. This attests to the importance of storing food, water, and beverage near the monuments for their consumption.

Jars dominate the assemblage in both Units 3 and 4, but this is not surprising given the criteria I laid out above (see Footnote 2). No significant difference exists in the number of jars, *ollas*, or *paicas* between the levels, suggesting the activities performed in these areas did not change much over time (Table 6.5 and Table 6.6).

Based on the excavation data presented in Chapter 4, Unit 3 was more residential in nature and Unit 4 was potentially a civic area associated with the Huaca B platform. I performed a comparison of the jar diameters between the two sectors to see if one area was using larger jars than the other area. The results were similar for the two areas, suggesting there were no detectable differences in the cooking, storing, or consumption in these two areas that can be deduced from utilitarian wares. The average rim diameter of jars from Unit 3 was 10.65 and the average for Unit 4 was 10.40.

**Table 6.5: Unit 3 ceramic count by level.**

| UNIT 3 | | | |
|---|---|---|---|
| Level | Jar-Utilitarian | *Olla*-Utilitarian | Paica |
| Level 1 | 223 | 41 | 24 |
| Level 2/2A | 14 | 6 | 1 |
| Level 3 | 28 | 4 | 4 |
| Level 3A | 6 | 4 | 0 |
| Level 3B/3C | 56 | 19 | 6 |
| Level 3D/3E | 46 | 5 | 6 |
| Level 4 | 2 | 0 | 0 |
| Level 5 | 28 | 4 | 8 |
| Level 5B | 32 | 3 | 1 |
| Level 5C | 13 | 4 | 1 |
| Level 6/7 | 64 | 11 | 9 |
| **TOTAL** | **512** | **101** | **60** |

**Table 6.6: Unit 4 ceramic count by level.**

| UNIT 4 | | | |
|---|---|---|---|
| Level | Jar-Utilitarian | *Olla*-Utilitarian | Paica |
| Level 1 | 73 | 7 | 0 |
| Level 2 | 42 | 8 | 5 |
| Level 3 | 20 | 0 | 0 |
| Level 3A | 13 | 4 | 1 |
| Level 4A | 33 | 9 | 16 |
| Level 5 | 14 | 3 | 9 |
| Level 5PR | 10 | 2 | 0 |
| Level 5B | 2 | 0 | 1 |
| Level 5C | 0 | 0 | 1 |
| Level 6 | 14 | 4 | 8 |
| Level 7 | 10 | 3 | 1 |
| **TOTAL** | **231** | **40** | **42** |

As noted above, rim types at Licapa II are convex, straight, everted, expanded, and carinated. Of the rim types recorded, in general, more convex jars were found on the site and in each level. Expanded rims were the next most prevalent, followed by everted and straight. Finally, carinated rims were the least popular at the site and were only found in the upper levels.

There is no stratigraphically significant difference in the distribution of the rim shape of jars in the excavation data from Units 3 and 4, except for the potential late adoption of the carinated rims (Table 6.7 and Table 6.8). Tables 6.7 and 6.8 show that convex rims were the most popular at the site throughout all the levels. The proportion of the different types compared to one another for any one given level does not vary much. Therefore, based on the collected data it cannot be said that one ceramic rim type vanished while another was adopted. Some Castillo incised wares were found on the site, but there was no particular pattern to suggest an early use. This further confirms that they were a generic domestic Moche ware (Millaire 2009).

Swenson (2004) notes that there is also no apparent pattern through time in domestic ceramics in the Jequetepeque Valley. Gamarra and Gayoso (2008) and Topic (1977) note the same thing for domestic wares at Huaca de la Luna and Lockard (2005) for Galindo. This evidence demonstrates that utilitarian wares are weak indicators of changes over time or markers of time periods. Although utilitarian wares are not very useful in determining temporal differences in rim style or changes in feasting patterns across the site, we can say that the large number found in the excavations suggests that feasting, consumption, and possibly storage or preparation were important in the monumental zone of Licapa II.

**Table 6.7: Unit 3 distribution of jar rim shapes by level.**

| UNIT 3 | | | | | |
|---|---|---|---|---|---|
| **Level** | **Convex** | **Expanded** | **Everted** | **Carinated** | **Straight** |
| Level 1 | 139 | 64 | 55 | 5 | 28 |
| Level 2/2A | 9 | 3 | 1 | 2 | 3 |
| Level 3 | 11 | 9 | 8 | 1 | 4 |
| Level 3A | 4 | 4 | 1 | 0 | 0 |
| Level 3B/3C | 35 | 13 | 18 | 0 | 2 |
| Level 3D/3E | 26 | 13 | 17 | 0 | 1 |
| Level 4 | 0 | 2 | 1 | 0 | 0 |
| Level 5 | 18 | 18 | 8 | 0 | 0 |
| Level 5B | 24 | 11 | 7 | 0 | 0 |
| Level 5C | 12 | 4 | 2 | 0 | 0 |
| Level 6/7 | 41 | 23 | 8 | 0 | 5 |
| TOTAL | 319 | 164 | 126 | 8 | 43 |

**Table 6.8: Unit 4 distribution of jar rim shapes by level.**

| UNIT 4 | | | | | |
|---|---|---|---|---|---|
| **Level** | **Convex** | **Expanded** | **Everted** | **Carinated** | **Straight** |
| Level 1 | 30 | 12 | 14 | 1 | 11 |
| Level 2 | 12 | 14 | 4 | 0 | 3 |
| Level 3 | 13 | 8 | 5 | 1 | 3 |
| Level 4 | 14 | 10 | 7 | 2 | 5 |
| Level 5 | 10 | 10 | 2 | 0 | 3 |
| Level 6 | 5 | 5 | 1 | 0 | 1 |
| Level 7 | 1 | 6 | 1 | 0 | 2 |
| TOTAL | 85 | 65 | 34 | 4 | 28 |

Fine wares

In general, the overall excavated assemblages contains more fine wares than utilitarian wares demonstrating that using fine wares, in either feasts, rituals, ceremonies, or domestic contexts was more prevalent and important in the monumental core of the site than cooking, and storage. Ceramics found in each of the site sectors are somewhat different, suggesting they were used at different times or for different purposes.

*Huaca A Ceramics*

Ceramics found in association with Huaca A are different from the ceramics found anywhere else on the site. Mostly cream on red or red on cream, they are composed of an orange paste and a thick matted slip. From the excavation of Unit 2, we recovered one complete drinking goblet with a rattle base, and fragments of seven other goblets. The complete vessel has a bird motif around the rim (Figure 6.5). The goblet and goblet fragments were all found in the same general area just to the east of Wall 1 where there was a large looter's hole. It is possible that these vessels were associated with an elite burial inside the looted huaca. We also found a lid to one of these goblets in the same general area. The lid is seen in association with the goblet on fineline vessels depicting the Sacrifice Ceremony.  In Figure 6.5 Figure C carries the goblet covered with a lid.  The goblets and lids are seen on two murals from Pañamarca (Bonavia 1959; Trever et al. 2011).


**Figure 6.5: Goblet found in Unit 2.**

The presences of these goblets on Huaca A suggest that the Sacrifice Ceremony, or something similar, potentially took place on Huaca A.  Goblets are not commonly found in the tombs of the common Moche people, but have been found with elite individuals associated with the Sacrifice Ceremony, such as the priestess at San José de Moro (Castillo and Donnan 1994b; Donnan and Castillo 1994).

In the excavation of Unit 2 we also found other fragments of ceramics with the same paste and slip as the goblets. These include a large decorated *paica* with this same bird design as the goblet but in negative slip (Figure 6.6, A). The large jar that was potentially part of the series of offering and found above Tomb 1 (Figure 6.6, F), and the basin that was placed on the legs of the skeleton in Tomb 1 (see Figure 4.26) were also composed of this same paste. Other ceramics with this paste and slip include a plate with circles around the rim (Figure 6.6, B) and vessels with the stepped motif (Figure 6.6, C and E).

The radiocarbon dates for Huaca A show that it was the earliest structure at the site. This suggests that this style of ceramic is local. In many ways it is clearly "Moche." The stylized birds are similar to those found by Bennett (Bennett 1950) on a vessel from the Virú and middle Moche vessels from San José de Moro and Sipan (Luis Jaime Castillo, personal communication). The repeating bird motif is also very popular in Moche IV ceramics found in other sectors of the site and elsewhere. However, the orange paste and thick cream slip is different from ceramics found at other Moche sites. The forms of the vessels are also distinct (the goblet, basin, and large *paica* are atypical Moche forms), which suggests this is a Licapa II local Moche style (Christopher Donnan, personal communication 2011). I call this the Licapa A style.

Although the local Licapa A style dominated the assemblage of Unit 2, some of the other fragments that were found on Huaca A resemble Moche III/IV vessels found at Huaca de la Luna and El Brujo (see Mujica 2007:187) and suggest that the people participating in the ceremonies associated with Huaca A were interacting with the larger Moche world at the time. Sherds G, H, and I in Figure 6.6 all have typical Moche III/IV imagery in bas-relief. This includes the step motif, a stingray, and the wave motif. Huaca A was the only place on the site where bas-relief sherds were found.

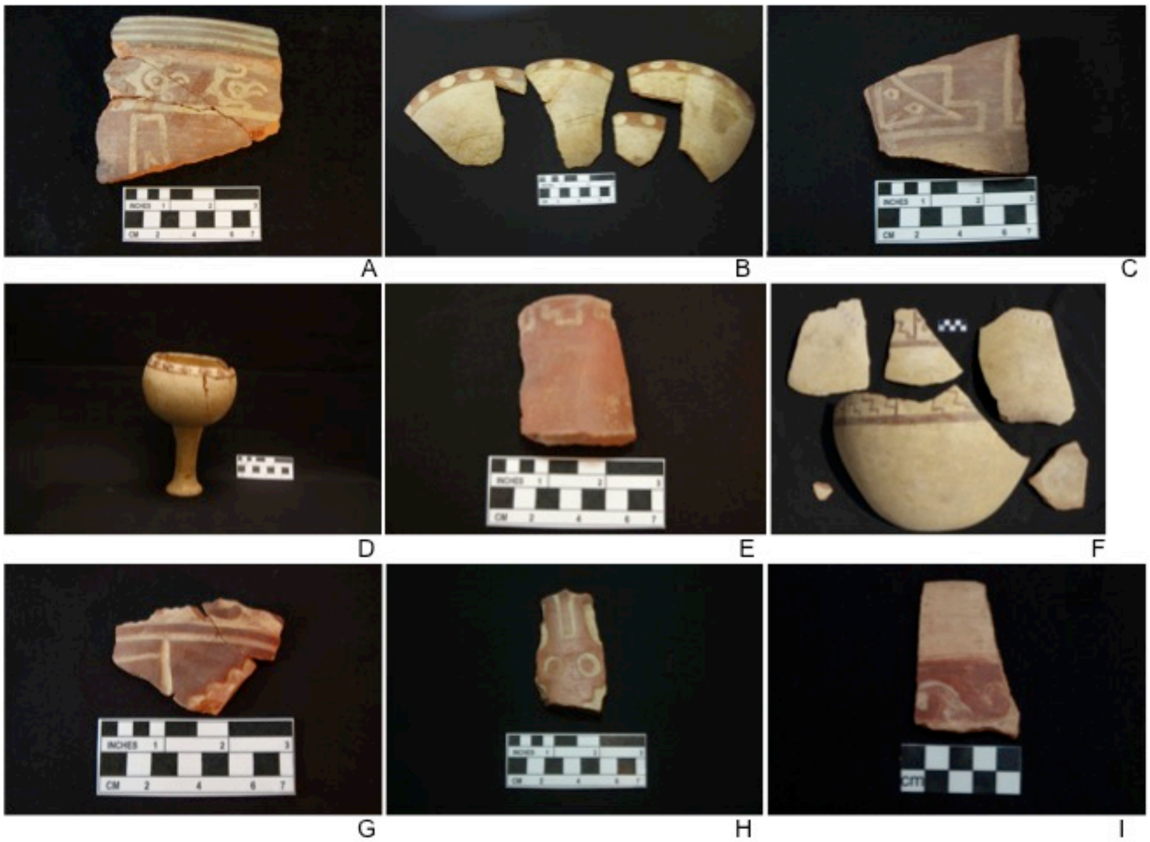

**Figure 6.6: Other ceramics in the Licapa A and Moche III/IV styles found in Unit 2.**

It should be noted that we only found one stirrup-spout fragment in association with Huaca A. This was Moche V in style and was found in the rubble covering the construction in Unit 1 and therefore without contextual information. Only eight other fineline sherds were found between Units 1 and 2. This is out of 204 total fine sherds found. These likely at one time had stirrup-spouts, but actual stirrups or spouts were not found on Huaca A. Like the single stirrup spout fragment, these eight other sherds were found in the uppermost levels (Levels 1-2) and suggest that finelines either were not used as part of ceremonies in association with Huaca A, or that finelines were introduced to the site after Huaca A's main phase of use.

As noted in Chapter 3 radiocarbon dates show that Huaca A is the oldest structure on the site. Ceramic data conform to this pattern. Huaca A ceramics are distinct from the ceramics found on the rest of the site. They consist of a local style that is potentially unique to the site itself that I refer to as the Licapa A style. However, since no other site in this region has been excavated, it remains unknown if this style is found at other sites in the area. Huaca A is also characterized by some examples of Moche III/IV ceramics, suggesting that while Licapa II was primarily autonomous and using local wares, the people at the site were in some way connected to El Brujo and Huacas de Moche. Finelines are not prevalent on the Huaca and are only found in the uppermost levels. This suggests that they were introduced to the site after Huaca A had been a long-standing fixture on the site.

*Huaca B Platform*

Patterns on Huaca B, the Huaca B platform, and between the huacas are much different from those seen on Huaca A. In Unit 4, on the platform, we have a stratigraphic sequence from sterile to the time of abandonment. From the lowest levels to the highest figurative fineline sherds are found (Table 6.9) and there is no evidence for Licapa A wares or any bas-relief ceramics. All of the fine ware ceramics from Unit 4 were either Moche IV or V, however, the earliest level, Level 7, contained one possible III/IV (Figure 6.7). The reason I suggest that this is a III/IV sherd is the large cactus and orange-red color paint. Larger motifs were more common in the earlier phases of fineline painting and this orangey red slip color is uncommon for fineline sherds found at Licapa

II. The radiocarbon dates for Level 7 of Unit 4 are some of the earliest for the site, and suggest that this area may have been occupied while Huaca A was in use, as will be discussed in Chapter 8. This level also predates the construction of the Huaca B platform and is associated with a course of adobes sitting directly on the sterile sand. Nonetheless, it is difficult to say that Moche III/IV ceramics were used in this sector prior to the construction of the platform simply on the presence of one sherd. Furthermore, the lack of evidence does not mean that Moche V was not also used at this same time in this sector.

**Table 6.9: Unit 4 distribution of fineline decorated sherds by level.**

| UNIT 4 | | | | | | |
|---|---|---|---|---|---|---|
| **Level** | **Figurative bottle** | **Geo Moche V bottle** | **Florero Figurative** | **Florero Geo V** | **Moche IV-spout** | **Moche V-spout** |
| Level 1 | 6 | 1 | 0 | 0 | 0 | 0 |
| Level 2 | 3 | 1 | 1 | 2 | 0 | 0 |
| Level 3 | 2 | 1 | 0 | 0 | 1 | 1 |
| Level 3A | 1 | 2 | 0 | 0 | 0 | 0 |
| Level 4A | 2 | 0 | 3 | 1 | 0 | 0 |
| Level 5 | 0 | 0 | 2 | 1 | 0 | 0 |
| Level 5PR | 0 | 0 | 2 | 1 | 0 | 0 |
| Level 5B | 1 | 0 | 0 | 0 | 0 | 0 |
| Level 5C | 1 | 0 | 0 | 0 | 0 | 0 |
| Level 6 | 8 | 0 | 0 | 0 | 0 | 0 |
| Level 7 | 1 | 0 | 0 | 0 | 0 | 0 |


**Figure 6.7: Possible Moche III/IV sherd found in Level 7 of Unit 4.**

The eight ceramics in Level 6 appear to be Moche IV, but it is possible that any one of them could have had a Moche V spout. This level post-dates 600 AD and suggests that Moche IV came into use at the site around this time. Definitive evidence for Moche V ceramics in this unit does not appear until between floors 5B and 5 on the platform (Table 6.9). This evidence, coupled with the radiocarbon dates, although scant, suggests that fineline Moche IV was introduced slightly earlier than Moche V at the site. The two styles were used concurrently for the majority of the time this sector of the site was in use. Patterns from between the huacas serve to clarify the relationship of Moche IV and V at the site and will be discussed below.

At least three atypically shaped *floreros* with Geometric Moche V imagery were found in Unit 4 (Figure 6.4). The paste used to construct these sherds, and other Moche V sherds from Licapa II may have been unique to this region. This will be further addressed below in my section on petrography.

*Huaca B Ceramics*

Ceramics from Huaca B, although for the most part similar to those found in Units 4 (Moche IV and V fine wares), also have some unique characteristics. The excavation of Unit 5 was the only one to uncover San José de Moro Late Moche fineline ceramics (Figure 6.8 A, B, C). Four fragments from separate vessels were found. We also recovered a different style of fineline on this huaca, an example of which was also found between the huacas in Level 3 of Unit 3. Unfortunately, the fragments are too small for complete characterization, but the slip color is much darker than most Moche IV and V ceramics and the line execution is less organized (Figure 6.8 D, E, and F). A quick examination of the petrography showed that this different style is likely a local ware (see L2-U3-N3D-Ce1-5 (38), L2-U5-N1-Ce5-6 (41), L2-U3-CN-N2-Ce3-2 Appendix B.4). The paste used for Figure 6.8 sherd F is the same as the paste used to construct the atypical *floreros* found in Unit 4 (Figure 6.4). Again, this will be further explored in the petrography section below. The dark color of the slip used for these sherds is also seen on other figurative sherds recovered from Huaca B (Figure 6.8 G and H).

Figure 6.8: Huaca B fineline ceramics.

*Ceramics Between the Huacas*

The ceramics found in Unit 3, the residential area between the Huacas, are very similar to the patterns seen on Huaca B. However, more ceramics were recovered from Unit 3 than from any other unit. Also, as noted before, the majority of these were fine wares. Like Unit 4, in Unit 3 we have a stratigraphic sequence from sterile soil to the last phases of site use. Moche IV and V fineline fragments are present in all of these levels (Table 6.10) and there is no evidence for bas-relief Moche III/IV or Local Licapa II wares in any of these levels.   As will be discussed in Chapter 6, the radiocarbon dates from the lowest levels of Unit 3 post-date the lowest levels of Unit 4, where only Moche IV and a possible III/IV sherd were found.  Therefore, the presence of Moche IV and V in all the levels conforms to the patterns seen on the Huaca B platform.  From the combined evidence of ceramic patterns and radiocarbon dates from Units 3 and 4, it appears as though Moche IV was introduced around A.D. 600, after Huaca A had been in use for some time.  Moche V ceramics were introduced shortly later and around A.D. 650.  This will be further explored in the following chapters.

**Table 6.10: Unit 3 distribution of fineline fragments by level.**

| UNIT 3 | | | | | | |
|---|---|---|---|---|---|---|
| **Level** | **Figurative bottle** | **Geo Moche V bottle** | **Florero Figurative** | **Florero Geo V** | **Moche IV-spout** | **Moche V-spout** |
| Level 1 | 37 | 9 | 15 | 5 | 5 | 3 |
| Level 2/2A | 2 | 1 | 0 | 0 | 1 | 0 |
| Level 3 | 5 | 2 | 1 | 0 | 0 | 1 |
| Level 3A | 2 | 0 | 1 | 0 | 0 | 1 |
| Level 3B/3C | 4 | 1 | 2 | 3 | 0 | 1 |
| Level 3D/3E | 1 | 3 | 2 | 2 | 0 | 0 |
| Level 4 | 0 | 0 | 0 | 0 | 0 | 0 |
| Level 5 | 5 | 1 | 1 | 1 | 1 | 1 |
| Level 5B | 4 | 0 | 2 | 1 | 0 | 0 |
| Level 5C | 1 | 1 | 1 | 0 | 2 | 0 |
| Level 6/7 | 12 | 1 | 2 | 0 | 2 | 0 |

Other patterns can be deduced from the excavation of so many fine ceramics in Unit 3.  Unlike the other units that were on the huacas and associated platform, this area was primarily residential or domestic in nature. Fine ceramics were found between sealed floors and, as noted, inside the *cuy* pen within this unit.  This suggests that fine wares were used in some capacity in everyday life and not reserved exclusively for use in rituals and ceremonies.

It is also significant that the types of fine wares as well as utilitarian ceramics do not vary much between Units 3 and 4. Unit 3 is residential in nature, whereas the Huaca B platform was likely used for civic, non-domestic activities. Both units contain similar assemblages of fine and utilitarian wares suggesting that the people residing between the huacas (if only seasonally) were likely the same people using the civic spaces on Huaca B. Because of this continuity, there is no difference in the ceramics in these two sectors even if the functions of the spaces were somewhat different.

<u>Summary of Excavated Ceramics</u>

Patterns from excavated ceramics are quite suggestive of the chronology of the site and the activities performed in the different sectors. The patterns from the excavations show that Huaca A was an earlier structure characterized by a local ceramic style and examples of Moche III/IV ceramics. Activities associated with Huaca A may have been related to the Sacrifice Ceremony as is evidenced by the goblets. Only a handful of Moche IV and V ceramics are found in the upper levels of Huaca A and no Local Licapa II ceramics are found on any other part of the site.

Ceramics from Huaca B and between the huacas exhibit a markedly different pattern. Moche IV and V fine wares characterize these sectors and there are no examples of the types of ceramics found on Huaca A. By correlating the stratigraphic data from Units 3 and 4 with the radiocarbon dates from these units, I suggest that Moche IV was introduced around A.D. 600 and Moche V soon after and around A.D. 650. With the adoption of Moche IV and V the site grew in size to include Huaca B, the Huaca B Platform and the residential area between the huacas. Until the abandonment of the site around AD 900, Moche IV and V ceramics were used concurrently. The ceramic excavation data, when correlated with the surface collection data, helps to further illuminate the activities performed and the chronological use of the site.

### Surface Collection Results

Of the 7,475 sherds analyzed, 3,691 were collected in a gridded fashion from the surface (Figure 4.2). Information from the surface collection is different from that gained through the excavated data. On a small and detailed scale, excavated data tells us about changes in the function and use of a site through time. Surface data shows larger-scale patterns and suggest if different parts of the site were used for different purposes. Through a series of interpolated surface maps we can determine where the distribution of certain types, or wares, was more concentrated and, therefore, interpret the function of the different site sectors.

Determining the distribution of utilitarian vs. fine ceramics across the site was essential to this study. Unfortunately the sample size for each individual category or type of ceramic was too small to determine if more of a certain type, for example, Geometric Moche V, was found in the different sectors of the site. Therefore, the ceramics from each sector were evaluated and placed into larger functional categories for comparison (See Appendix B.3 for spreadsheet data). Only the categories of fine wares and utilitarian wares were considered for this study. I distinguished fine wares based on the quality of the paste and exterior alterations. Fine wares include bowls, plates, basins, jars, *ollas*, and bottles. Utilitarian wares are cruder in construction and include jars, *ollas* and *paicas*.

In general, more ceramics were collected between the huacas than were collected over the rest of the site. Therefore, the percentage of utilitarian vs. fine ware per each collection unit is a much more useful proxy than the number of sherds found in each unit for determining the major functions of the site sectors. However, in this analysis I include maps of the overall number of utilitarian and fine ceramics collected and the percentage of these categories of the total ceramics collected for the unit.

The overall number of jars and *ollas* per collection unit was highest in the northwest portion of the site around the possible storage facility and also in the area between the huacas (Figure 6.9). However, the overall percentage of jars and *ollas* compared to the total number of sherds collected from each collection unit was highest in the northwest corner and the western portion of the site (Figure 6.10).

The pattern was somewhat reversed for fine wares. As expected, the overall number of fine sherds was higher close to the huacas (Figure 6.11). The percentage of fine wares compared to the overall total number of sherds collected for each unit was also much higher close to the monuments and dropped off as the distance from the monuments increased (Figure 6.12).

These patterns suggest that the activities outside the monumental core were less diverse than activities performed close to the huacas. The higher proportion of utilitarian ceramics away from the major monuments indicates that people were engaged in food preparation and storage in these sectors. However, they were also using jars and *ollas* close to the major monuments, suggesting that cooking and storage was an important part of the ceremonies and activities performed in this sector. Although a large number of jars and *ollas* were present close to the huacas, there was a higher percentage of fine serving ware and other fine ware, suggesting that the consumption of food, as well as other rituals and ceremonies using the fine ritual objects, were performed there. This is further corroborated by the ceramic data from the excavations, which also suggests fine ceramics, including stirrup spout bottles, were actually used in these rituals and ceremonies, as well as in domestic settings, and not just grave offerings.

Another interesting pattern apparent from an evaluation of the surface collection data is that we found a large amount of instruments clustered on the Huaca B platform and to the immediate west of Huaca B. Twenty-three trumpets were found between units J12 and J14, much more than were found anywhere else on the site (Figure 6.13). This further suggests that this sector of the site was used for ceremonies and other festive activities obviously involving music. We also found a number of examples of Late Moche fineline sherds near sectors M7 and N6, which could possibly indicate that people from San José de Moro or the Jequetepeque Valley were buried in this sector (Figure 6.14).

Overall, data from the surface collection allows for larger-scale view of the role of the different sectors at Licapa II. Even without excavation I can suggest that the areas away from the huacas were used for more mundane purposes than the areas close to the huacas based on the ceramic assemblage found there. In the future a surface collection of the entire INC delineated polygon for the “boundaries” of Licapa II, as well as a survey of Cerro Azul will help to clarify the relationship Licapa II had with the surrounding landscape and other settlements in the area.

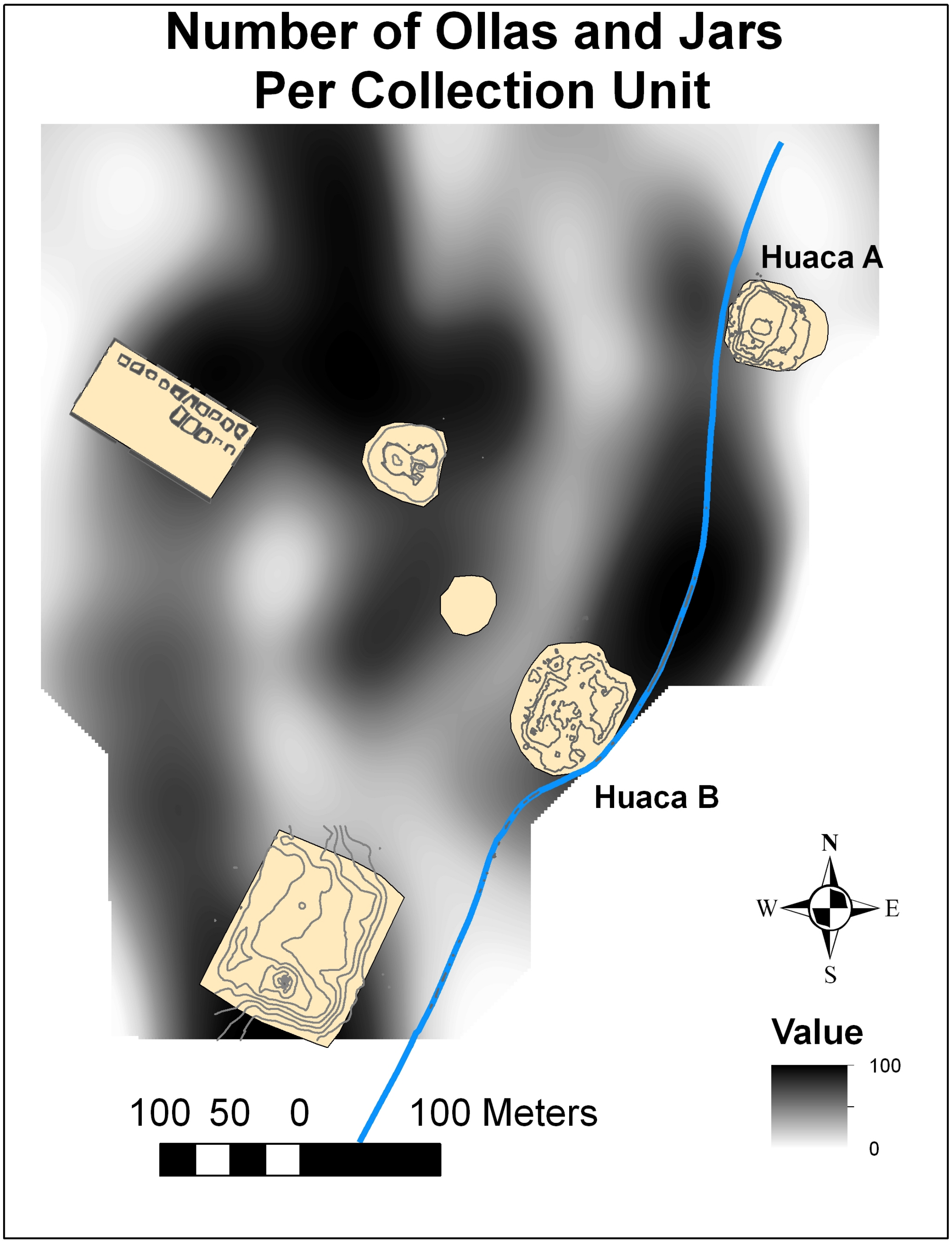


**Figure 6.9: Interpolated surface of the number of utilitarian ollas and jars per surface collection unit.**

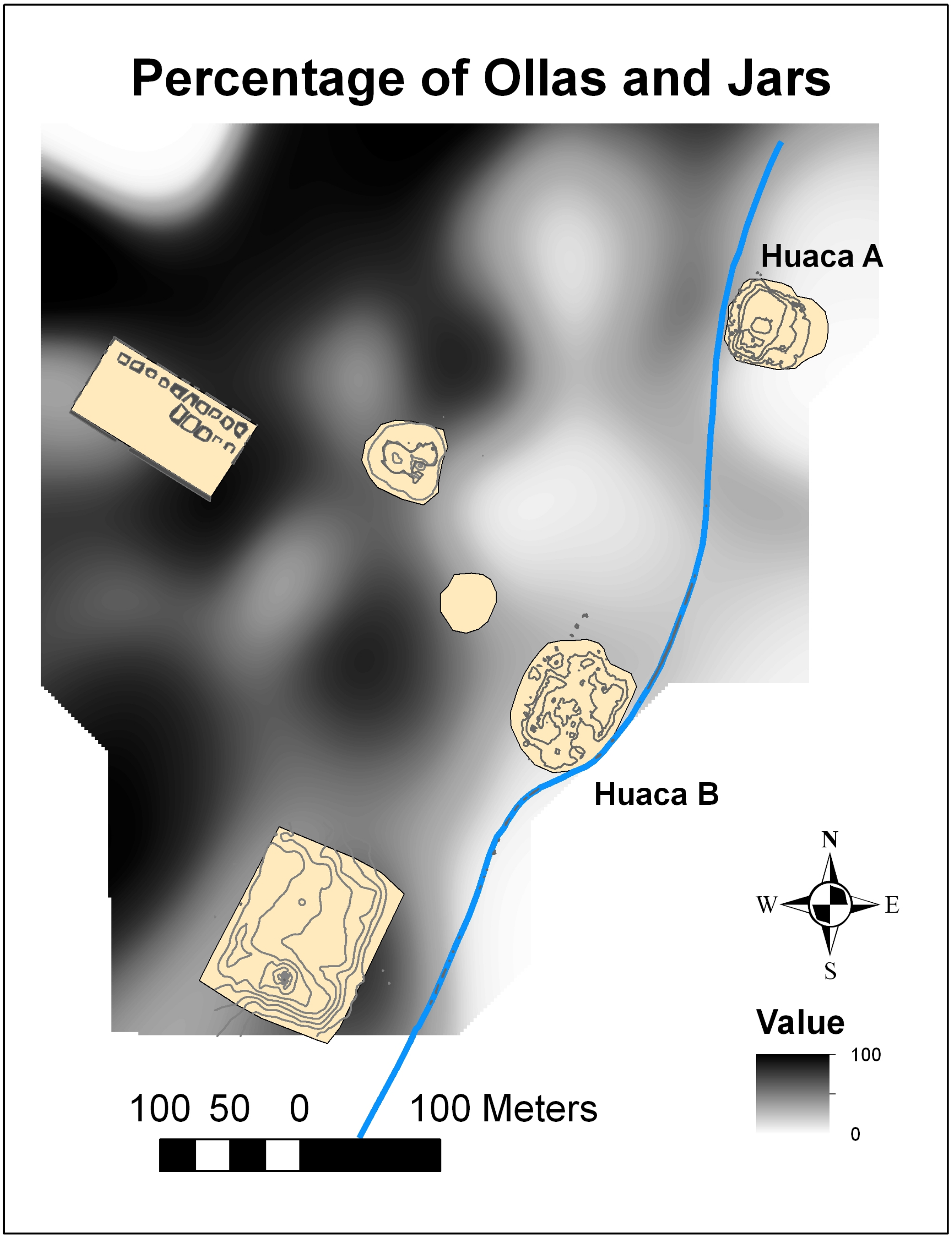


**Figure 6.10: Interpolated surface of the percentage of utilitarian of ollas and jars per surface collection unit.**

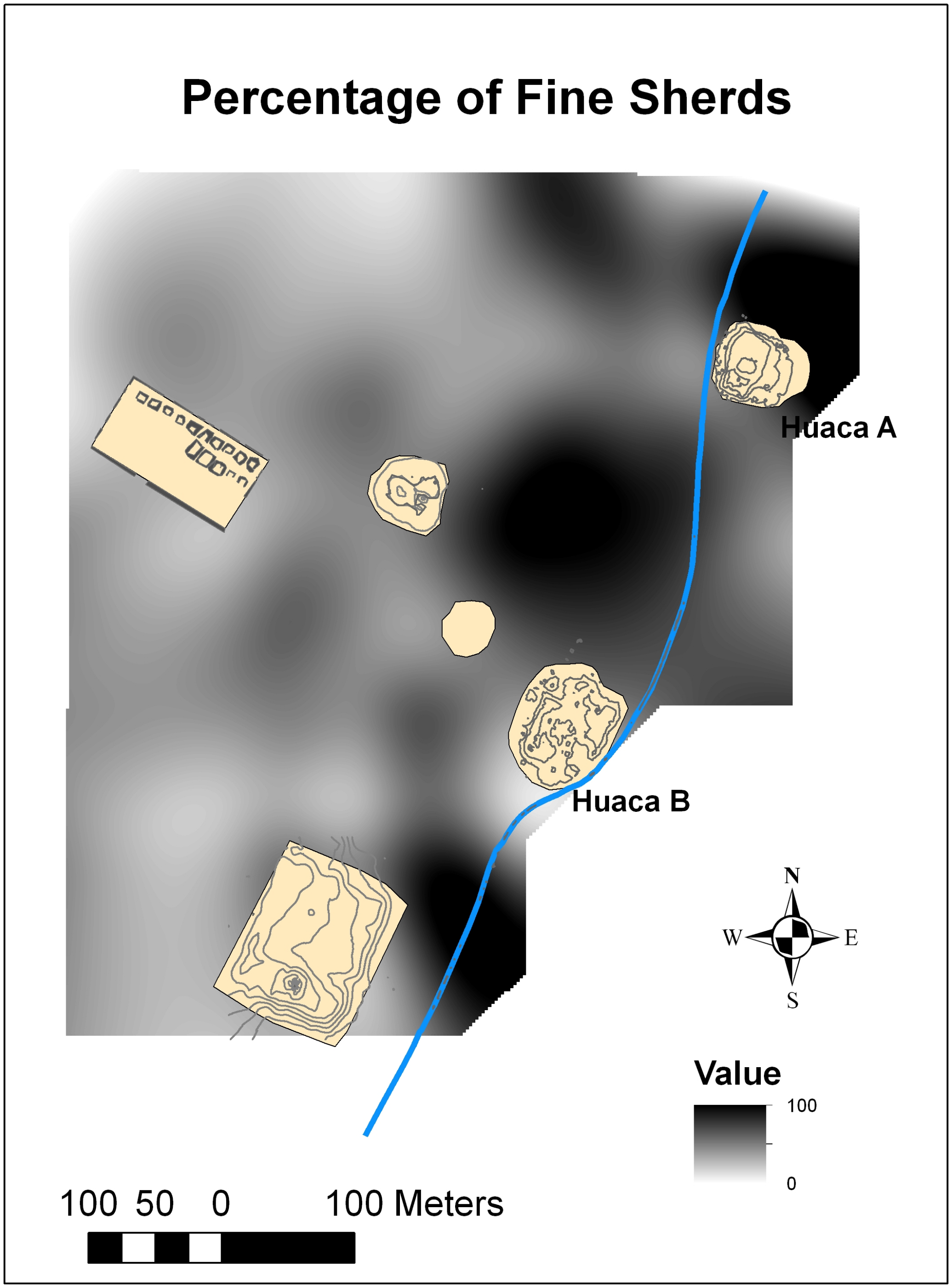


**Figure 6.11: Interpolated surface of the percentage of fine ware ceramic sherds per surface collection unit.**

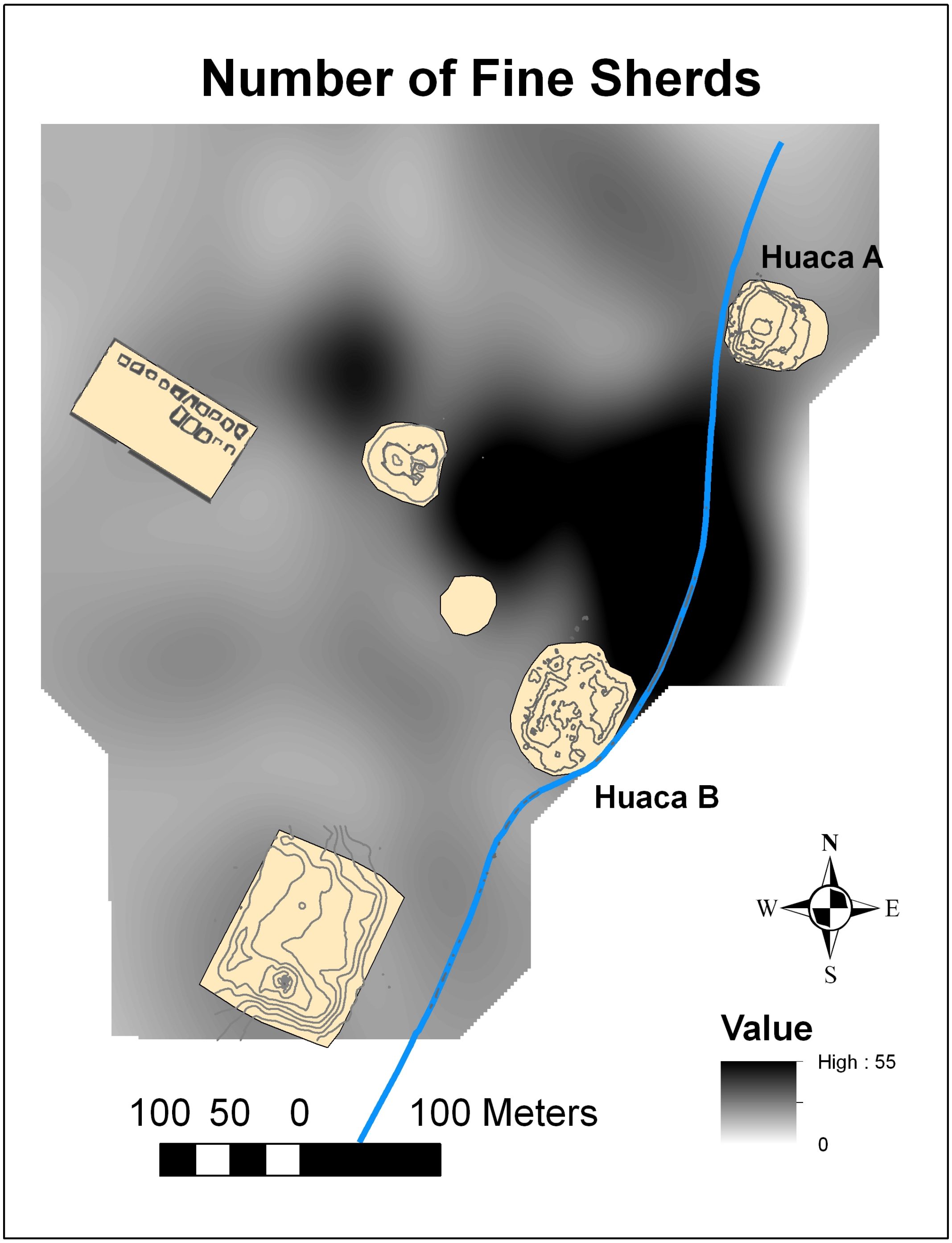


**Figure 6.12: Interpolated surface of the number of fine ceramic sherds per surface collection unit.**

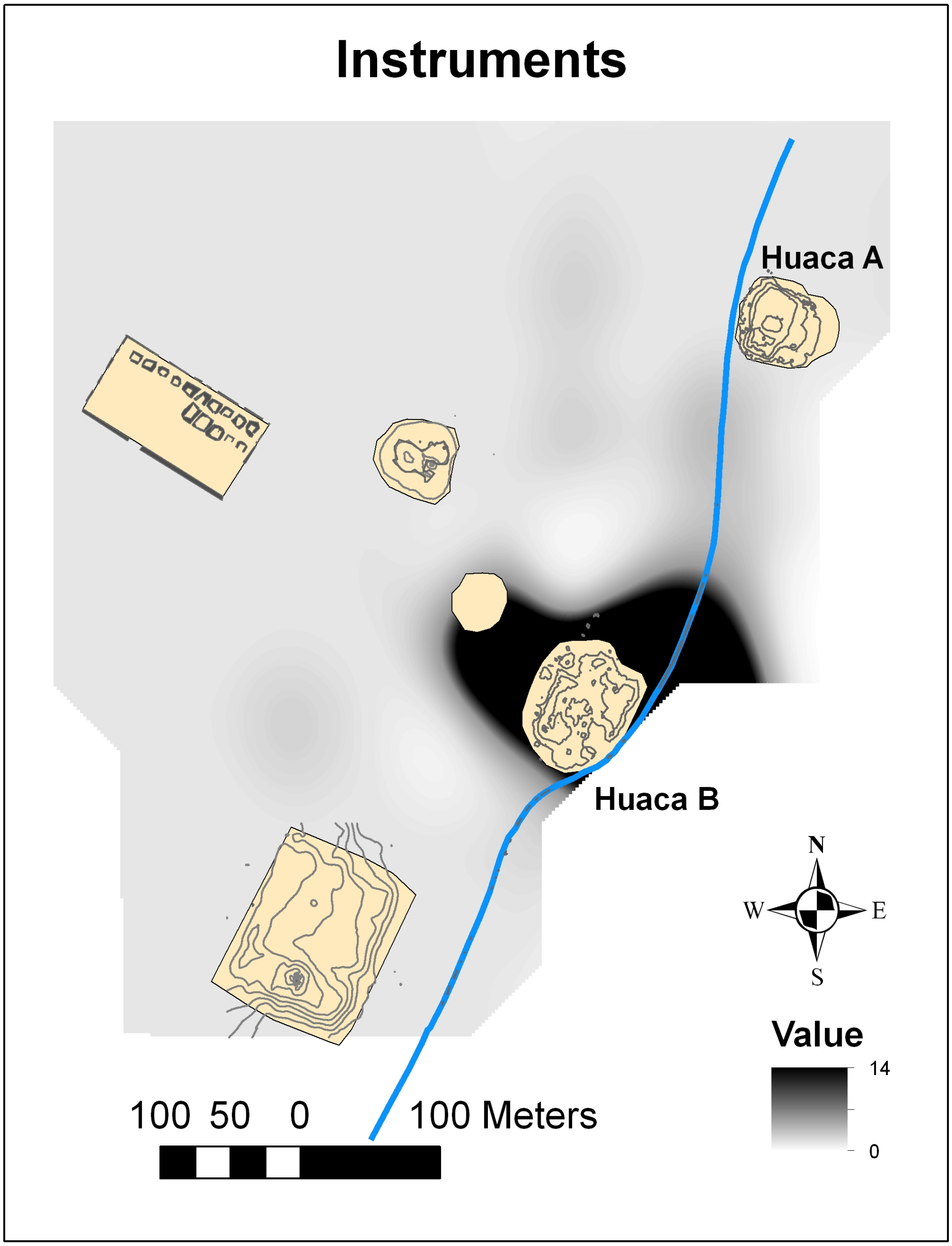


**Figure 6.13: Interpolated surface showing the location of the concentration of instruments.**


**Figure 6.14: Late Moche fineline sherds found in sectors M7 and N6 of the surface collection at Licapa II.**

## Non-Moche Ceramics at Licapa II

Although Licapa II was a Moche site, some other ceramic styles are found there. One possible Chancay figurine fragment was found in Unit 2, in the same areas as the goblets. Also, as mentioned, we found a double spout and bridge vessel in Chamber 3 of Unit 5 (see Figure 4.40). These objects were contemporary to the Moche occupation and suggest that the people of Licapa II had connections well outside the Moche realm.

We also encountered a handful of ceramics from later time periods at Licapa II. During the surface collection one highland Cajamarca sherd was found. Some Lambayeque and/ or Chimu sherds were found on the surface and in the upper disturbed excavation levels. Also, an intrusive Lambayeque burial with cranial deformation was seen in a looter's hole adjacent to Huaca B. Although later people used the site in some capacity, there is no evidence for an intensive Lambayeque or Chimu occupation at Licapa II and it was for the most part probably abandoned around 850-900 AD.

### Licapa II Ceramics Conclusions

Overall ceramic patterns from the excavation and the surface collection show that there were two major phases characterized by the use of different ceramics at the site of Licapa II. Prior to A.D. 600 a local style of ceramic, exemplified by the goblets and other ceramics with the same motifs, pastes, and slips was used in activities associated with Huaca A. The context and function of these object points to rituals involving the presentation of blood or other liquids on Huaca A. The simply decorated *paica*, jars and basin suggest that consumption was an important aspect of these ceremonies that was incorporated into the burial practices, as demonstrated by tomb 1 in Unit 2. Moche III/IV ceramics, which are a hybrid of Moche III and IV and largely found in tombs associated with Huacas 3 and 4 at the Huaca Cao Viejo (Mujica 2007), were also encountered in association with this huaca and demonstrate that the site had affiliations with Huaca de la Luna and El Brujo at this time.

Patterns from the surface collection and excavations suggest some kind of shift occurred at the site around 600-650 AD. Around the time of the abandonment of the Huaca de la Luna and Huaca Cao Viejo, Licapa II was expanded to include Huaca B and the domestic area between the huacas. With this expansion Moche IV ceramics were introduced at the site. The introduction of Moche IV wares brought a new way of expressing Moche religion. The portable object now depicted images in fineline of the ceremonies that were once likely performed on the Huaca A, such as the Sacrifice Ceremony. However, no Moche IV fineline goblets or other accoutrements of the ceremony were found at the site. This potentially indicates that this ritual was no longer performed at Licapa II, yet it was still commemorated through different activities, such as feasting, as is evidenced by the increase in food storage and serving vessels, as well as the plethora of highly charged ritual ceramics. Therefore, with the introduction of Moche IV there was a shift in the way the ceremonies were performed and the politics were organized at Licapa II.

Very soon after the introduction of the Moche IV style, the Moche V style was introduced to the site. However, the activity patterns at Licapa II stay the same and Moche IV continues to be used along side Moche V wares until the abandonment of the site around 850-900 AD. Late in the use of the site Late Moche ceramics appear in small quantities, and other local/ hybrid Late Moche ceramics are present. The multiple ceramic styles potentially indicate that Licapa II was a crossroads of sorts. No other site to date has been excavated with both Moche IV and V ceramics in such abundance as well as examples of Late Moche. The smaller size of this center, combined with its geographic location places it on the edge of northern and southern realms of Moche cultural development, and much of the interactions between the regions could have occurred at Licapa II. This idea will be further explored in following chapters. It is first necessary to compare the ceramics found at Licapa II to ceramics found at other centers to better understand how it was connected to the larger Moche world.

## Ceramics Compared

To understand the role of Licapa II and its affiliations throughout the Moche world it is pertinent to use a comparative approach. One way to examine the interconnectedness of different settlements across a landscape is to look at the nature of craft production, consumption, and exchange. When examining the relationship of larger centers to smaller centers, economic transactions and the basis of the economic control are crucial to understanding the nature of the sociopolitical organization. Control over resources such as land, irrigation networks, technology, and the means of production, is critical for obtaining and maintaining political power (Brumfiel and Earle 1987; Earle 1997; Service 1975). Understanding the environment in which portable objects, such as ceramics, were manufactured and distributed can potentially contribute to our understanding of which sites were interacting on some level with one another and which sites were not (Hill 1977; Plog 1976).

Distinguishing between the movement of ceramic objects and the movement of ceramic technology is important. People move objects from place to place through trade and exchange. The different technologies that were used to produce the objects will be imbedded within the objects themselves. This technology can be studied far away from the locus of production and replicated. Therefore, the actual potter from one place does not need to travel to a new place to teach his/her skills to the local people, nor does he/she have to permanently move there to make pots, though this is a possibility. If technology can be replicated and then transported from site to site, or region to region, the mineralogy of the clay may be different depending on where the materials were procured. Two pots that look the same may be composed of different clays depending on where they were made. It is also possible that the clay itself was traded and moved throughout the region resulting in pots produced in many locations being identical. Examining ceramics and their technologies from various sites can, therefore, help define the nature of ceramic production in terms of the amount of political control and trade within a society.

Ceramics produced in a variety of different locales/workshops with the same surface decoration, form, style, tempering, and manufacturing techniques could speak to a wide net of control exerted by a political authority with the means to mandate certain practices and control production (Clark and Parry 1990; Costin 1991). On the other hand, slight variations in the technology of production and surface design may be related to practices of emulation and may speak to more of an ideological control or influence, rather than an overtly political control. Moreover, if the objects themselves were moved, this could signify a broad trade network and different type of social interaction or political control all together (Arnold 1985; Hill 1977; Plog 1976; Rice 1987). The model of moving ceramics could follow one of two broad patterns, although many other scenarios are also possible. First, if all objects across a region are produced at one locale using the same resources, this could indicate political control over production and long-distance distribution. It should be noted that there are difficulties in distinguishing these ceramics from ones produced at a variety of controlled workshops all using the same materials. Second, ceramics found at a single site but with a variety of distinct technological signatures would signify a more complex exchange network and political system. The models presented above are not necessarily mutually exclusive, as some sites may have been more tightly controlled than others and the nature of relationships and control definitely changed over time.

In order to better understand issues of control over ceramic production and trade I performed a preliminary comparative analysis of Moche fine ceramics. This study was to see if similarities in the **external** surface decoration or style (Hegmon 1992; Sackett 1977; Weissner 1985; Wobst 1977), and **internal** technological style (Lechtman 1977; 1999; Stark et al. 1998; Sillar and Tite 2000; Tite 1999), can be associated with a particular suite or suites of ceramics found at the sites of Huacas de Moche, El Brujo, San José de Moro, Cerro Mayal, and Licapa II. Although preliminary and incomplete, the information gained from a study such as this can be used to evaluate the movement of people, ceramics, and ceramic technology in the Moche region.

External Style

Unlike ceramic classification studies in Mesoamerica and elsewhere (Adams 2008; Gifford 1960; Wheat et al. 1958), the type-variety method for classification, in the traditional sense, is not used for fine Moche ceramics. Rather than relating attributes and modes to pastes to determine the "ware" of a ceramic, we distinguish ceramics based mostly on their form, implied function, and their surface characteristics and designs.

Moche ceramics are famous for their elaborate designs and themes and are quite easy to identify. As has been discussed in Chapter 3 and above, the exterior surface style of finely decorated ceramics have been explored in many aspects of Moche studies. Scholars have contended that the images depict a wide range of subjects: from gods, priests, and warriors participating in any number of political, supernatural, and religious activities, to scenes with animals and anthropomorphized being and from every day life and death. Superficial similarities and differences in ceramics, especially those distinguished by the Larco sequence and the northern Moche sequence, have been used to explain temporal change, political relationships, societal collapse, and are the major player for determining the breadth of the formerly well accepted Moche State.

Over the last decade more fine-grained research has demonstrated that there were many regional variations in external style (Donnan 2011; Castillo and Donnan 1994a; Castillo 2001; Bourget 2010). However, seemingly similar ceramics, especially Moche IV, are seen throughout much of the southern Moche realm. Their presence at numerous Moche sites still has some scholars claiming that there was a unified southern Moche State (Chapdelaine 2011; Uceda 2010). One of my major goals is to understand if these similarities in the surface decorations could be correlated to similar construction techniques and clays. For example, if Moche IV ceramics were all the same, both internally, and externally, then this would demonstrate that the ceramics originated from one location and that there was a high degree of standardization and possibly indicating overt state control. It could also indicate that there was overt control over multiple workshops that were supplied with the same clays and materials and mandated to produce the ceramics in a standardized way.

Coupling, and/or uncoupling, external and internal styles can greatly expand our knowledge on how ceramics were made and how ideas and/or the actual vessels were distributed. This knowledge will begin to illuminate the different kinds of interactions that took place across the Moche geopolitical landscape.

In the analysis of external traits on Moche ceramics I examined the form of the vessel, quality of the paints and slips, colors of the paints and slips, thickness of the lines, and other qualitative attributes. These include the execution of fineline figures, which can help distinguish between the Moche IV, Moche V and Late Moche styles.

Internal Style

Although numerous studies have addressed the external surface designs, there have only been a handful of studies that address the physical and chemical properties of Moche ceramics (Chapdelaine et al 1995; Chapdelaine et al. 1997; Rohfritsch 2006, 2010; Russell et al. 1998; Shimada 1994, 1998; Swann et al. 1999; Wiersema 2010). These studies include Neutron Activation Analysis (INAA) to source the clays from Huacas de Moche ceramics and pigments (Chapdelaine et al. 1995) and X-ray florescence to examine the internal construction of museum vessels (Swann et al. 1999; Wiersema 2010). In the most complete chemical study, Angés Rohfritsch (2006, 2010) used catholuminecence and optical microscopy to evaluate the pastes and inclusions of different ceramic samples from San José de Moro, Pacatnamú, Dos Cabezas and El Brujo. She also used scanning electron microscopy (SEM), X-ray diffraction, and Raman spectroscopy for determining the partial chemical composition of the clays and the pigments, as well as for the evaluation of the firing atmosphere.

In this study I use petrography to evaluate the physical and chemical properties of ceramics. To date, there are no fully published studies that use ceramic petrography to evaluate the properties of Moche ceramics (see Shimada 1994 and Russell et al. 1998 for partial studies). Petrography, or thin section analysis, is an analytical technique used in geology and archaeology to examine the internal mineral make up and structure of rocks and other samples such as ceramics (Rice 1987; Stoltman 2001). Samples are prepared by making 30 μm thick cross-sections of ceramic sherds and examining these in both plane and cross polarized light to identify the different mineral inclusions and characteristics of the ceramic paste. A pottery paste is made up of a specific clay type (identified in thin section analysis by its color and optical activity), mineral and rock grain texture (size and shape), type of mineral inclusions, and nature of void spaces (size and shape) (Meanwell 2008).

My goals in this analysis were three-fold. I wanted to see if different manufacturing technologies and/or aplastics could be identified that (1) correspond to the form and function of the vessel; (2) could be related to certain geological formations or geological zones in the region; or (3) could indicate any information about the nature of the production, consumption, and/or exchange of these items. For example, whether or not ceramics were made locally or if they were imported from different regions, or if there is any indication of standardization based on an evaluation of the external vs. the internal style. I will now present the findings from my study and evaluate them in the context of these goals.

Petrography: A Study of Moche Pottery

For this study I examined a total of 71 sherds, nine sherds from Huacas Moche*,* eight sherds from El Brujo*,* seven from San José de Moro (SJM), and 28 from Licapa II. I also reexamined 19 thin-sections from Cerro Mayal that were graciously lent to me by Glenn Russell and Banks Leonard. Aside from the Cerro Mayal samples, I chose the sherds based on their exterior decoration to see if I could determine if the exterior traits correlated to the internal structure of the paste. The sherds were primarily fineline

Moche IV, V, and Late Moche and consisted of bottle body sherds, *floreros*, stirrups, and spouts. One of the goblet fragments and the large bird decorated piaca from Huaca A were also sampled. Although I knew what types of sherds I had in the sample, I did not look at the photographs of the exterior surface of each thin section prior to starting the study. This way I was free of preconceived notions of how the ceramics should be grouped based on their exterior style and form. This study is preliminary in that I do not describe every mineral for every thin section examined. I was mainly interested in seeing if I could group ceramics together by the characteristics of the fabric or paste. Paste groups can help us understand if the ceramics were locally produced or traded. In the future I plan to do a more complete analysis examining more sherds and potentially clay and temper sources, but the results from this pilot study are promising and show some very interesting patterns. Photographs and a brief description of the sherds and pastes are in Appendix B.4. In general, this study found that there does seem to be a high correlation between vessel form and ceramic fabric. *Floreros* tended to be tempered with larger inclusions, while the spouts had the least number of inclusions. However, the difference in the vessel form does not affect the findings in this study.

*Licapa II and El Brujo*

Sherds from El Brujo and Licapa II shared the most petrographic characteristics with each other, which is not surprising since the sites are in the same valley. Ten distinct pastes were identified from sherds from Licapa II (3, 4, 4a, 5, 6, 6a, 6b, 7, 7d and 8). Three of these pastes (3, 4a, and 7d) were also found at El Brujo and could suggest that the vessels themselves were moved between sites or the same or similar clay and temper sources and technology of production were used to construct the pots. All the

Licapa II and El Brujo pastes were similar mineralogically and contained mostly quartz, feldspar, and iron oxide and appear to have derived primarily from sedimentary rocks. Three of the pastes (6, 6a, and 6b) only found at Licapa II, contained large sandstone, quartzite, and greywacke rocks. Aside from the pastes with the rocks, the major difference between the Licapa II pastes were in the size, spacing, shape, sorting, and amount of temper, all of which is explained in more detail in Appendix B.4.

The sherds with the rock pastes were all from Moche V *floreros* and a style of ceramic that is similar to San José de Moro but found at Licapa II. This potentially indicates that the Late Moche style was developed or experimented with in the northern Chicama Valley, but more research is needed to confirm this (Castillo 2009). Other sherds from Licapa also have Late Moche surface characteristics, but seem to be composed of Chicama pastes, or other pastes from San José de Moro, or the Jequetepeque Valley not identified in this study (see Appendix B.4 for L2-U5-N1-Ce4-26 (68), L2-U5-N1-Ce1-1 (57), L2-U5-N2-Ce1-2 and L2-U5-N1-Ce5-6 (41)).

Three different pastes were identified for geometric Moche V vessels (4, 6 and 7). Paste 7 was also used to make Moche IV vessels at Licapa II as well. Also, Moche IV and V spouts from Licapa II and El Brujo in many cases consisted of the same paste. The form of the vessel, not the external style, may have dictated the composition of the paste. Pastes 4 and 7 were identified for sherds from Cerro Mayal that were not Moche V in style.

*San José de Moro*

The sherds from San José de Moro were distinct from the sherds from the other sites. Three pastes were identified for the SJM sherds (7a, 7b, 7c). These all have angular minerals and consist of mainly plagioclase feldspar, orthoclase feldspar, quartz, chlorite, biotite, rock fragments, lots of calcite, and few small examples of igneous materials.  The spacing between the minerals and the pore spaces distinguish the pastes 7a, 7b, and 7c from one another.  Two of the SJM sherds have painted wavy lines that are atypical of the Late Moche style, and interestingly, these two sherds have the same unique paste (7c).  A number of sherds from Licapa II that were decorated in the SJM Late Moche fineline style have the same composition as sherds from the site of SJM (see paste 7a).  This confirms that the SJM vessels were brought to Licapa II and some relationship existed between the sites.

*Huacas de Moche*

All the Huacas de Moche sherds are distinct from the sherds from the other three sites (Pastes 1 and 2).  These ceramics are distinguishable by a higher concentration of large mafic igneous minerals, such as orthopyrecene and hornblende. Weathered orthoclase feldspar is also characteristic of these pastes.  The temper in the HdeM sherds is more rounded, slightly larger, and has more spacing between particles than the sherds from the other sites. Although the interior construction of the HdeM sherds is different from the petrography of sherds from Licapa II, the painting and slip on the exterior are quite similar between some of the sherds.  The sherds from HdeM all came from residential complex 5 of the urban nucleus, and are all from the final occupation of the site (Santiago Uceda, personal communication).  They all have classic Moche IV exterior painting.  Moche IV sherds from Licapa II were not the same internally as the sherds from HdeM and suggest that they were made at different workshops in the Moche world. However, these workshops were all operating with a similar vision of what Moche IV ceramics were supposed to look like exteriorly, and therefore, clearly ideologically linked.

*Cerro Mayal*

In the early 1990s Glenn Russell, Banks Leonard, Jesus Briceño and Margaret Jackson excavated a ceramic workshop at Cerro Mayal (Russell et al. 1994; Russell and Jackson 2001; Russell et al. 1998). The workshop contained only Moche IV ceramics in a limited number of forms. Also, no classic fineline ceramics were found on-site, but this does not mean they were not produced there. They performed a petrographic study on sherds excavated from the workshop and sherds with similar surface characteristics found at other sites identified in a Chicama Valley survey (Leonard and Russell 1992). Four forms were chosen to evaluate: Face-neck jars, figurines, *floreros*, and stirrup-spouts. In total 160 sherds were evaluated, 20 of each form from Cerro Mayal, and 20 of each form from other Chicama Valley sites. The results of this study showed that there were no significant petrographic differences between the sherds (Russell et al. 1998:84). They used this information to suggest that Cerro Mayal was the major source of ceramic production for all of the lower Chicama Valley. However, Moche sherds with non-Mayal traits from the other sites, of which there are plenty, were not included in this study. Therefore, their conclusions are Mayal-centric and do not take into account Moche V and other ceramics that were being produced at the same time.

Nineteen sherds from Cerro Mayal were re-evaluated for my study. I chose to soley look at the stirrup-spouts and the *floreros* since they were comparable to my sample from Licapa II and the other sites. One of the original thin sections was broken so this is why only 19 were re-analyzed. I also chose to only look at the sherds from Cerro Mayal, and not from the other sites in their study. I found that, indeed, all the sherds from Cerro Mayal were similar petrographically, but they could be classified into three of the paste groups I identified at Licapa II. All the *floreros* were very similar to paste type 4a with a few type 4. The Mayal sherds had more void spaces than any of the Licapa II sherds. This could be a factor of different thin-section preparation procedures, or could suggest that the clay and temper sources were similar but the techniques used to construct the vessels were different. All the stirrup-spouts were also paste type 4 and 4a, but one was paste type 7.

These results suggest that some of the ceramics from Licapa II were potentially produced at Cerro Mayal, but this was not the major production locus for the entire valley. Other forms and types, which include a Moche V bottle, Moche V *florero,* a Late Moche imitation ware, the base of a Local Licapa II goblet and another Local Licapa II sherd, were found at Licapa II that had similar pastes to those produced at Cerro Mayal (Paste 4 and 4a). However, none of these forms or styles from Licapa II was identified at Cerro Mayal. Since Mayal was only engaged in the production of a limited set of Moche IV wares, this suggests that potters making vessels at different sites in the valley exploited the same clay and/or temper sources, or that there is not a great deal of variation in the valley between sources. These patterns also suggest that people in the Chicama Valley shared a rough knowledge of the manufacturing techniques that did not vary much through time. A similar pattern is apparent in the architecture, which will be discussed in Chapter 7.

Evaluation of Goals

Below I evaluate my three goals presented above in the context of the findings from the preliminary petrographic study. To reiterate, I wanted to see if different manufacturing technologies or minerals could be identified that (1) correspond to the form and function of the vessel; (2) could be related to certain geological formations or geological zones in the region; or (3) could indicate any information about the nature of the production, consumption, and/or exchange of these items. For example, whether or not ceramics were made locally or if they were imported from different regions, or if there is any indication of standardization based on an evaluation of the external vs. the internal style.

(1) did the internal style correspond to the form and function of the vessel?

The answer is yes. There are clear patterns that do exist between vessel types. However, these are more of a factor of manufacturing technique than of the mineralogy. *Floreros* tended to have more void spaces and larger temper, whereas the stirrup-spouts had fewer inclusions and followed a different pattern.

(2) could the mineralogy of the clays be related to certain geological formations or geological zones in the region?

As should be expected, the geology of the Andes is very complex. Sediments from the high Andes travel down the rivers to the coast and can be incorporated into ceramics as either clays or tempering agents. The few studies that have been performed that have looked at the chemical composition using Instrumental Neutron Activation Analysis (INAA) and catholuminescence, as well as ethnographic work, have suggested that the Moche mixed clay from a variety of sources to produce fine ceramics (Chapdelaine et al. 1995; Russell et al 1998; Rohfritsch 2006, 2010). Since we know that clays for fine wares were mixed, identifying clay sources is very difficult and would likely not yield productive results. Nonetheless, Figure 2.1 demonstrates that the sediment load of the Jequetepeque, Chicama, and Moche rivers are distinct and consist of a variety of sedimentary and igneous rocks. Considering that the geology of each north coast valley is distinct, I hypothesized that these distinctions may be apparent in the mineralogy of the clay and temper used to construct the vessels from each valley, even if clays from within the valleys were being mixed and an exact geological source cannot be located. Therefore my goal was to see if certain minerals or geological attributes were characteristic of ceramic pastes from the different valleys, which proved to be the case. Ceramics from the Huacas de Moche contained a higher concentration of igneous materials, whereas San José de Moro ceramics were high in calcite. These features made ceramics from these locales distinguishable from each other and from those found in the Chicama Valley.

> (3) could petrography indicate any information about the nature of the production, consumption, and/or exchange of these items. For example, whether or not ceramics were made locally or if they were imported from different regions, or if there is any indication of standardization based on an evaluation of the external vs. the internal style?

Unfortunately, only two Moche fine ware ceramic workshops have been archaeologically identified, one at Cerro Mayal and the other at the Huacas de Moche (Jackson 2000; Russell et al. 1994; Russell and Jackson 2001; Topic 1977; Uceda and Armas 1998). Three other mid-grade and domestic ware workshops have been noted at

Galindo (Bawden 1977), Pampa Grande (Shimada 1994) and Pampa de los Incas in the Santa Valley (Wilson 1988:211). Because of the dearth of workshops, and acknowledging that identifying geological clay sources is beyond the scope of this project, the characteristics of the pastes can only aid in distinguishing between suites of similar and different ceramics. Even though I cannot identify the production locale of the ceramics with diverse pastes, this study helps clarify some of the relations between ceramics of similar and different surface designs and suggests some geological patterns that may help in identifying workshops in the future.

The manufacturing technologies for ceramics at San José de Moro and Huacas de Moche do vary from those in the Chicama. Most telling, however, is the difference in mineral inclusions in the temper, suggesting that sources local to these valleys were being exploited. The difference in mineralogy makes it easy to identify foreign or traded vessel, as is the case for the San José de Moro sherds at Licapa II.

The patterns identified in this study show that throughout the Moche world ceramics were made using a variety of different clay and temper sources as well as various construction techniques. However, these distinctions could also be due to the roughly 300 years over which all the ceramics examined for this study were made. The patterns of internal vs. external style demonstrate that painting was not necessarily dependent on the internal structure. Ascetically similar vessels from different valleys were produced with different clays and tempers. A more complete study would be to identify if certain characteristics or themes painted on ceramics can be assigned the same paste group, and ultimately be linked to a specific locale.

Overall, different spatial patterns are apparent in the internal style vs. external style. The internal style is dictated by the production locale, whereas the external style is more ideological in nature in that ceramics with similar iconography were produced in different places. Moche IV ceramics from Huacas de Moche that look similar externally to Licapa II and El Brujo Moche IV sherds were distinct and obviously made elsewhere. Moche IV and V ceramics from Licapa II, although already proven to not carry and temporal component, have the same internal structures. San José de Moro ceramics were brought to Licapa II, but were also emulated and reproduced at the site itself, or another location (or vice versa). This suggests that there was no strict standardization and control over the production of ceramics and that trade, emulation, and invention were practiced. Ideology and portable object are spread in different manners and these differences account for the indirect relationship between internal and external ceramic style.

## Implications of the Ceramic Study

Ceramics are one of the most important datasets in Moche studies. Because of their ubiquity and stylistic differences we can potentially trace meaningful patterns of political or religious affiliation. As is the case for archaeology around the world, in Moche studies ceramics have also been used as a major indicator of time period or phase. As has been discussed, Larco (1948) developed his five-phase ceramic sequence based on vessels found mainly the Chicama Valley. This sequence remained unchallenged for roughly 50 years until the 1990s when archaeologists began to question whether or not the changes in ceramic vessel form and style were indicators of time or represented regional differences in style, or both. Because of the apparent differences in fineline styles, Moche was subsequently divided into northern and southern spheres (Castillo and Donnan 1994a).

More recent research by Steve Bourget (2010), Jean-Franciose Millaire (2010), Juliet Weirsema (2010) and Christopher Donnan (2011) has further suggested that there were numerous Moche styles, some of which may not even be considered Moche at all (see Bourget on Huancaco 2010). Donnan (2011) refers to these various styles as "sub-styles" and has recently proposed that besides the well-known San José de Moro Late Moche sub-style, Dos Cabezas, Huancaco, and Huacas de Moche had their own sub-styles. The Huacas de Moche sub-style is defined by Donnan as the Moche IV style defined by Larco. My petrographic research in this chapter shows that there may be some problems with this straightforward interpretation, yet I believe it is very useful to start thinking about Moche ceramics in these terms rather than in terms of chronological markers. Therefore, I consider Moche IV and V separate styles. However, that being said, I do believe that there is some validity in Larco's chronological phases. The problem is that there is more variability between the valleys and there is a great deal of overlap between the so-called phases, which will be further explored in following chapters.

We are still grappling with understanding the temporal and stylistic differences between Moche IV and V in the south and how this relates to the Late Moche patterns seen in the north. However, data from Licapa II has greatly aided in clarifying some of these issues. In this chapter, I show that there was a shift in the ceramic patterns at the site of Licapa II. Local wares characterize the early period (pre A.D. 600), whereas Moche IV and V wares are abundant in the later phase (post A.D. 600). I demonstrate that the Moche IV/ V distinction does not strictly relate to time, even though Moche IV may have been introduced at Licapa II slightly earlier than Moche V. I also present evidence that may in the future help show that the Geometric Moche V and possibly the Late Moche style originated in the northern Chicama Valley. In the final chapters of this dissertation I offer some suggestions on potential political or religious reasons, rather than temporal reasons, for the stylistic differences between Moche IV and V ceramics. I also offer commentary on why these ceramics have different geographical distributions. However, first I compare architectural features from Licapa II to other Moche sites. Then I review radiocarbon data from Licapa II and other sites to temporally contextualize it in the Moche world.

# CHAPTER 7

## MOCHE ARCHITECTURE AT LICAPA II

This chapter focuses on the analysis of architectural features found at the site of Licapa II. The most useful means of analysis of Licapa II architecture is to compare features found at the site to other known Moche architecture. In this chapter I compare aspects of the architecture from Licapa II to architecture seen at other Moche sites in the northern and southern Moche realms.

### Moche Huaca Centers

Moche huacas are constructed of adobe mud bricks with multiple levels, decorated facades, complex networks of passageways and entrances, and different activity areas. A huaca center is a settlement with at least one huaca where ceremonies were performed. Moche huacas centers are not uniform in size, shape, construction techniques, orientation, form, or number of huacas, and because there are more differences than similarities between centers, their cohesion or interconnections have not been adequately addressed. The exceptions to this are the sites of Dos Cabezas and Ucupe (Bourget 2011), and the last phase of the Huaca de la Luna and the Huaca Cao Viejo at El Brujo (Quilter et al. 2012), which are almost identical and allow us to suggest that some centers were intimately linked to one another through any number of factors. These possibly include warfare resulting in direct control, kin relationships, marriage ties, religion and/or ideology, economics, and other political ties.

Hundreds, perhaps thousands, of huacas remain unstudied, so we still do not know the breadth of architectural styles and techniques employed. However, as a whole, there seem to be more differences between huaca centers than similarities. Admittedly, my analysis omits other Moche sites, such as cemeteries, fortifications, outposts, habitations without huacas and other types of settlements, which should be considered for a more complete study of Moche architecture in general. Unfortunately, insufficient evidence exists for such settlements and they are not directly comparable to Licapa II. However, by looking at patterns at Licapa II and comparing them to patterns seen at other Moche huaca sites we can begin to construct a more dynamic geopolitical landscape.

Unlike the portable art of ceramics, textiles, metal and other small objects, huaca architecture is immobile. A person can own a pot or reproduce an imitation of that pot without having ever visited the place where it was made, but a person cannot replicate a huaca without having experienced the original first hand. Unlike ceramics the conceptions of appropriate and proper huaca construction techniques had to travel as ideas and could not be replicated *in situ*.

Even though huaca construction technology had to travel as ideas and not artifacts, huacas and ceramics have much in common. Like pottery, the visible exterior form and painted façade can look the same as another huaca, but any number of internal construction techniques could be used to achieve this goal. An interior of a huaca could consist of adobe chambers with rubble fill or of solid segments of adobe blocks and still have the same outer appearance when plastered. Therefore, huacas that appear the same or similar, may have different internal structures and signify political relationships much different from huacas with the same internal construction and outside design.

Here I evaluate the layout, form, orientation, adobe bricks, and other internal construction techniques employed in the huaca construction at Licapa II in an attempt to understand the relationships this site may have had with other Moche sites. I do this to some extent in Chapter 4, mainly between Licapa II and Huacas de Moche and El Brujo, but I expand upon the discussion here to include other Moche sites. In the final section of the chapter, I explore Moche huaca functions and address the scale of various huaca centers.

Site Layout

When I originally set out to study Licapa II, I noticed the similarity in the layout of the site to the layouts of Huacas de Moche and El Brujo. I began with this as a starting point for my analysis. As has been noted all three sites have two major huacas, and now I can say that all three have a residential component between the huacas. However, Licapa II is much smaller than El Brujo and Huacas de Moche. First, the huacas themselves are less than half the size of the huacas at the large centers (Table 7.1). Second, at El Brujo and Huacas de Moche a half km separates the two structures, whereas only 300 m separates Huaca A and Huaca B. Finally, the offset of the two huacas at Licapa II is different from the offset at the large sites. At both El Brujo and Huacas de Moche, the northern most huaca is located to the northwest of the southern most huaca at an angle of roughly 310 degrees. At Licapa II the huacas are offset by 29 degrees, and the northern huaca, Huaca A, is located to the northeast of Huaca B (Figure 7.1). Therefore, overall, the layouts of the sites, aside from having two main huacas, are quite different. The layout of Licapa II is not like any other studied and published Moche sites, and, therefore, may prove to be unique to the site itself. This may be related to the fact that it was oriented with specific landscape features and/or celestial bodies, as will be discussed below. Although the layout of Licapa II is not comparable to other Moche sites in a strict manner, other aspects of the architecture of the huacas at Licapa II can be compared to features seen at other sites. Some of these will be detailed below.

**Table 7.1: Dimensions and orientations of Huaca de la Luna, Huaca Cao Viejo, and the Huacas at Licapa II**

| Huaca | Length (m) | Width (m) | Height (m) | Orientation |
|---|---|---|---|---|
| Huaca de la Luna | 95 | 95 | 20 | 31º |
| Huaca Cao Viejo | 120 | 100 | 30 | 15º |
| Huaca A- Licapa II | 55 | 57 | 9 | 24º |
| Huaca B- Licapa II | 80 | 66 | 7 | 24º |


**Figure 7.1: Plans of Licapa II, El Brujo, and Huacas de Moche showing the offset angle of the two main huacas.**

## Huaca Form and Orientation

The forms of the two huacas at Licapa II are quite different from each other. This could be because their functions were different, or because new political influences or ideological systems, and thus new ideas on huaca style, entered the site in the short time between their constructions. Although their forms are quite different, both huacas share many internal architectural features. They also share features with huacas from other sites. I will elaborate on these shared features below.

*Huaca A*

Neither of the huacas at Licapa II is an exact replica nor simulacrum of other studied huacas. As noted, the form of neither of the Licapa II huacas is directly comparable in form to Huaca de la Luna or Huaca Cao Viejo. However, the form of Huaca A, with its three steep sides and one elongated stepped terrace side is similar to the form of Huaca Fortaleza, or Huaca Grande, at Pampa Grande (Figure 7.2 and Figure 7.3) (Haas 1985; Shimada 1994). However, Huaca Fortaleza is much larger (270 meters long x 185 meters wide, and 54 meters tall) and there are significant structures on the first terrace. Some of the huacas at Pacatnamú also have a similar form, but most of these are Lambayeque constructions (see Hecker and Hecker 1985).

Also, Edificio 1 of the New Temple at Huacas de Moche is a somewhat similar structure in form to Huaca A. The New Temple covers an area of 25,008 $m^2$ and is 19 meters high (Tufinio et al. 2009:113; Uceda et al. 2011a, 2011b). The western façade is elongated and consists of two stepped terraces or benches, which are similar to those seen at Huaca Fortaleza, but smaller (Figure 7.4). The other three sides of the New Temple are more vertical like Huaca A and Huaca Fortaleza. Edificio 1 of the New Temple was a departure from the architectural and mural program at Huaca de la Luna. There is no plaza here, and (Tufinio et al. 2011) suggest that this is because there were no longer public ceremonies. The spaces within this huaca are also quite narrow and intimate. Our excavations were limited on Huaca A, but it is possible that the spaces on the interior of the top of the huaca were also narrow and private. However, the elongated east side of Huaca A with steps or terraces appears to have been highly visible and possibly reserved for more conspicuous activities. As I described in Chapter 4, the form of this huaca mimics the form seen in some of the iconography (Figure 4.31), and may have been used for religious ceremonies involving the presentation of goblets. Therefore, although the exterior form of the New Temple might be similar to Huaca A, their functions could have differed. I will elaborate more on the function of the huacas at Licapa II and other sites below.

**Figure 7.2: Huaca Fortaleza and Pampa Grande looking west. The photograph shows that the one side is an elongated terrace whereas the other sides are more vertical (Haas 1985:393).**

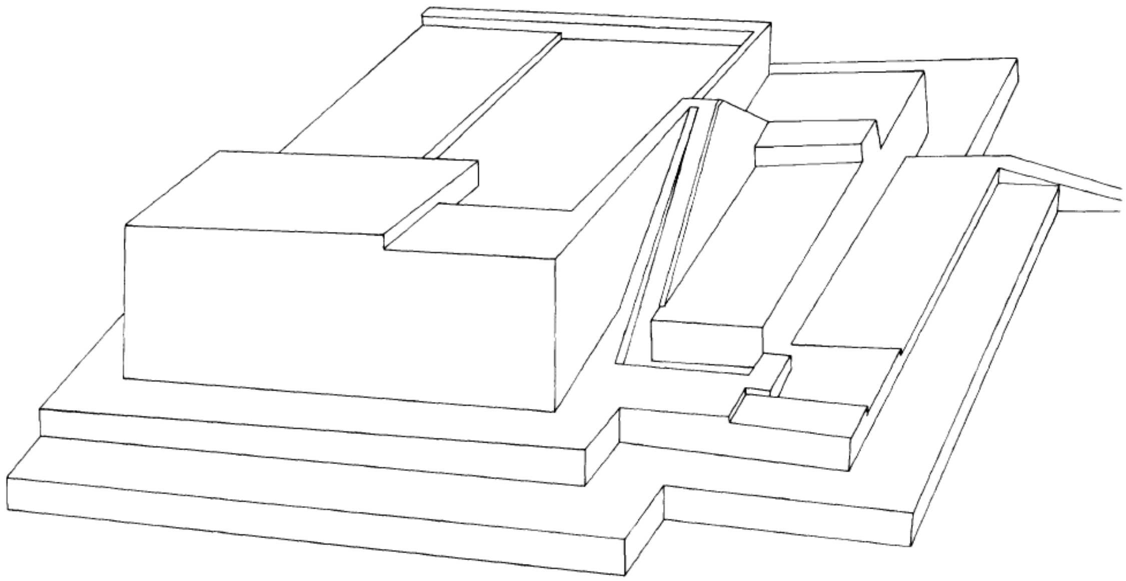

**Figure 7.3: Schematic drawing of Huaca Fortaleza at Pampa Grande (Haas 1985:395).**

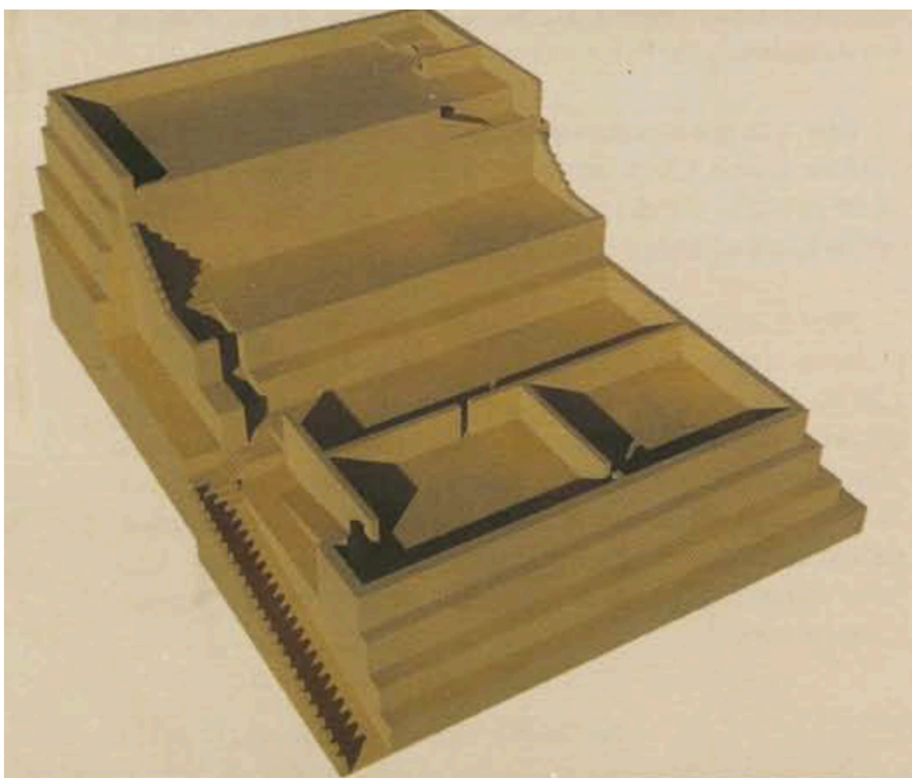

**Figure 7.4: Schematic drawing of Platform III - Building I (The New Temple) at the Huaca de la Luna (Uceda et al. 2011a).**

Another notable similarity beside their forms is that Huaca A, Huaca Fortaleza, and The New Temple are all oriented so that major mountains or *cerros* can be seen when viewing the huaca from the front (Figure 7.5, Figure 7.6 and Figure 7.7). Unlike the Huaca de la Luna, which is oriented parallel to Cerro Blanco, the New Temple is oriented so the front, or the elongated side, is facing west and Cerro Blanco is directly behind the building. Therefore, the front of the huaca and Cerro Blanco can be clearly seen when facing east from the Huaca del Sol and the urban center. Huaca Fortaleza's elongated side is facing north and a large *cerro* is directly behind this structure as well.

Similarly, when you face west from either the top or base of Huaca A, you can see the entirety of Cerro Azul. This means that if the eastern elongated side was the front, as I propose, onlookers would have seen Cerro Azul as the backdrop to the ceremonies performed on Huaca A (Figure 7.5). This is quite different from Huaca Cao Viejo and the Huaca de la Luna where both plazas face north. As noted, the front plaza of Huaca de la Luna is parallel to Cerro Blanco. There are no *cerros* in direct association with Huaca Cao; however, it is possible that it was oriented in some way with a far away *cerro* on the horizon. This possibility has not been fully explored.

The orientation of architecture to significant landscape features is known throughout the Andes and may have served religious functions (Bawden 1996; Conklin 1991). Therefore, it is possible that these huacas were oriented toward prominent *cerros* or other landforms in different ways to serve some religious needs. Orienting towards and incorporating landscape features within architecture will be discussed more below.

**Figure 7.5: Huaca A, Licapa II facing west.  Two people are sitting on the east façade for scale.**

**Figure 7.6: Huaca Fortaleza at Pampa Grande facing southeast (Photo by the author).**

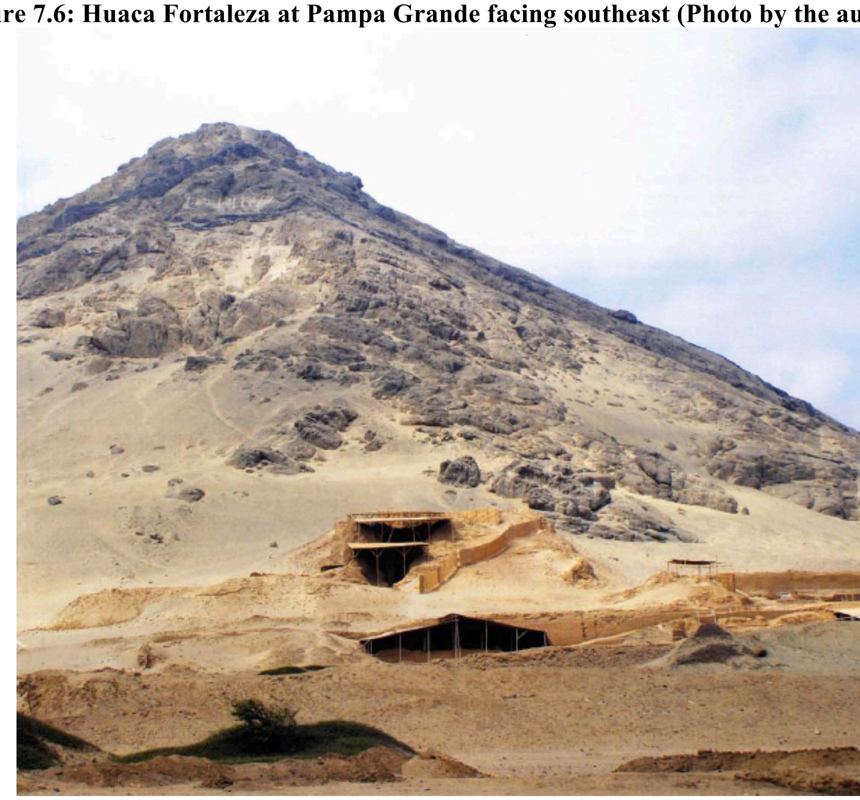

**Figure 7.7: The New Temple facing east (Uceda et al. 2011a).**

*Huaca B*

The low multi-room form of Huaca B is quite different from the form of Huaca A. Huaca B shares features with Pacatnamú and Huaca Colorada in the Jequetepeque Valley, where multiple rooms, passageways, corridors and enclosed spaces characterize the structures that were used for a range of ritual, feasting and domestic activities (Hecker and Hecker 1985; Swenson and Warner 2012). Huaca B also appears to have been somewhat similar in form and possibly function as Huancaco in the Virú Valley (Bourget 2010). Bourget suggests that Huancaco was a monumental habitation structure with public rooms, cooking areas, with the front dedicated for feasting activities. The back of this structure was more exclusive, and probably reserved for residences and more private rituals. The recently investigated Huaca del Sol at the Huacas de Moche may have played a similar role as will be discussed below (Tufinio et al. 2012). The front of Huaca B, or the Huaca B platform, could have been similar to the front of the monumental structure at Huancaco. The back of Huaca B, or the huaca itself was more exclusive and only reachable by the ramp from the platform.

The platform at Huaca B also shares characteristics with the platforms at Dos Cabezas and Ucupe, both sites from an earlier time period. All of these sites have a western wall delineating the platform, but no northern or eastern walls are present (Figure 7.8 and Figure 7.9) (Donnan 2007; Bourget 2011). However, there were rooms on the platform of Huaca B, which does not appear to be a feature of the other two sites. Also similar is that Huaca B is oriented towards the north, which is similar to Dos Cabezas, Ucupe, as well as Huaca Cao, and Huaca de la Luna. However, the angle of orientation of all of these huacas is slightly different (see Table 7.1). and Dos Cabezas is oriented at an angle, 9-degrees east of north. Although the platform form and general orientation may be very similar, the form of the huacas themselves at Dos Cabezas and Ucupe are actually quite different from that of Huaca B. Dos Cabezas and Ucupe, like the Huaca Cao Viejo and Huaca de la Luna, have four stepped facades that appear to have been painted, which is not a feature of Huaca B.

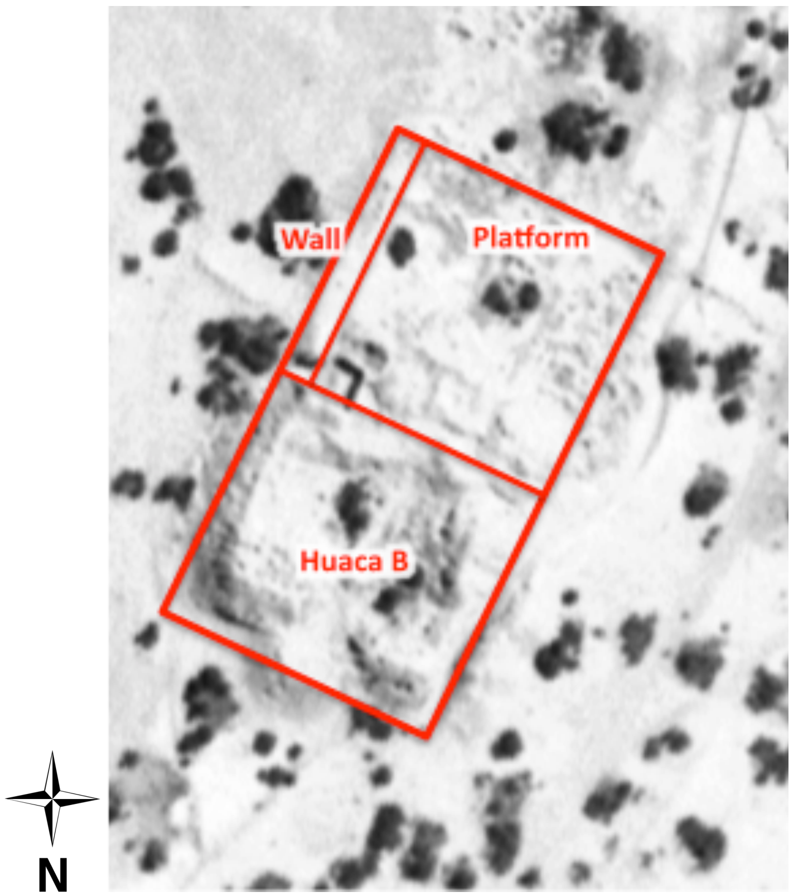


**Figure 7.8: 1943 aerial view of Huaca B showing the Huaca, the platform and the western wall.**

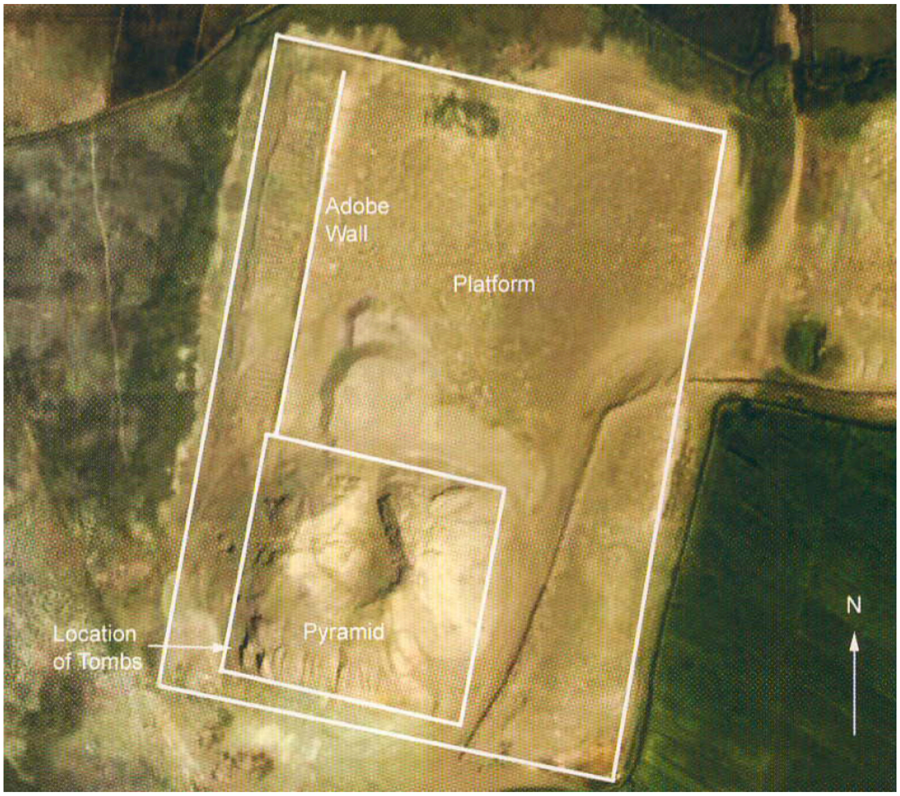


**Figure 7.9: Aerial view of Dos Cabezas showing the huaca, platform, and western wall (Donnan 2007).**

**Figure 7.10: Eastern facade of Huaca B showing that there is no stepping and that it is relatively low. The canal is in the foreground.**

Overall, although sharing various similar features with other Moche huacas, the forms of the huacas at Licapa II are not identical in all aspects to other Moche huacas. However, with many of the Moche huacas unstudied, it is possible that there are exact replicas elsewhere.

## Adobe Bricks and Construction

### *Brick Size*

Bricks at Licapa II were of three sizes, which I categorized as "small," "medium," and "large." These brick sizes follow a chronological order of sorts. Rectangular "medium" bricks, varying in size but averaging about 32 x 22 x 13 cm, dominate the assemblage. Most have flat sides, but few are cane marked (Figure 7.11). Huaca A was constructed mostly of these "medium" sized bricks, as was the domestic area between the huacas and the first construction phase of Huaca B and its platform. The final phase of construction on Huaca B and the platform used smaller rectangular bricks with an average size of about 25 x 16 x 12 cm. The final remodeling of the west façade at Huaca A contained large bricks, 39 x 25 x 19 cm. These bricks were a late addition since they covered a wooden feature dating to A.D. 650-770.


**Figure 7.11: Medium size brick from Licapa II with cane marks.**

The "medium" bricks from Licapa II are not very diagnostic since they were somewhat generic and common in the Chicama Valley for a long period of time. A survey of the bricks recorded by Leonard and Russell (1992) in the Chicama Valley indicate that "medium" bricks are the most typical type encountered. Furthermore, Licapa II bricks are not directly comparable to bricks used in Huaca Cao Viejo, since the "medium" size brick is seen in varying quantities throughout all the construction phases (Gálvez et al. 2003). However, this size brick does dominate the later phases at the site (Buildings A and B). A similar brick size also is found at Platform B of the Huaca las Lagartijas, the second largest platform mound at Galindo, and the largest mound at this site, Huaca de las Abejas (Lockard 2005:240, 256). It should be noted that Galindo, Huaca Cao Viejo, Huaca de la Luna, The New Temple, Huacas del Sol, Pañamarca, and

Huaca Fortaleza all have bricks with maker's marks[10] imprinted into the flat sides of the adobes.  Unlike these sites, no maker's markers were found on the bricks at Licapa II.

Smaller bricks are found in Building E of the Huaca Cao, but cannot be compared to the "small" bricks found at Licapa II, since radiocarbon dates show that there is no temporal relation in the use of these bricks (Franco et al. 2003).  Construction of the Huaca Cao had ceased by around A.D. 600 and the final phase consisted of marked bricks, which were not found at Licapa II.  The "large" bricks at Licapa II are not the same size as any of the adobe bricks found at Huaca Cao Viejo (Gálvez et al. 2003).

*Adobe Stacking*

Both Huaca A and Huaca B are composed of stacked adobes. Depending on where they were found on the site, adobes were either dry-stacked or contained mortar between the upper and lower adjoining rows.  The body of the terrace of Huaca A contained dry stacked adobes.   The stacked adobes that made up the highest part of Huaca B contained mortar (Figure 7.12).

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[10] Maker's marks are lines and impressions made in the large flat side of an adobe while it was still wet. Numerous different marks have been recorded at various sites including Huacas de Moche, El Brujo, Pampa Grande, Galindo, Dos Cabezas and Ucupe (Bourget 2011; Gálvez et al. 2003; Lockard 2005; Hastings and Moseley 1975; Shimada 1978). Hastings and Moseley (1975) suggest that they may have been related to work groups that were responsible for producing a quota of bricks.  However, their purpose remains unknown.

**Figure 7.12: Inside a looter's pit on the south end of Huaca B. Adobe bricks in this section of the Huaca were stacked with adobe mortar.**

Adobes were stacked throughout the site at varying orientations without any apparent patterns between the rows (see Figure 7.13 for orientations). The majority of bricks were laid in alternating rows of headers and stretchers, but rowlock rows were also common and shiner rows were noted (Figure 7.14). It was also noted that on occasion adobes changed orientation in the middle of the row. These variable adobe positions have also been noted in the Huaca Cao Viejo, especially in the later phases (Buildings A and B) where rowlock rows become increasingly common (Gálvez et al. 2003), at Pampa Grande (Haas 1985), and Pañamarca (Lisa Trever, personal communication). However, unlike the Huaca Cao Viejo, the Huaca de la Luna and Sol, and Pañamarca, no wall segmentations[11] of adobe blocks were found at Licapa II (Hastings and Moseley 1975; Moseley 1975) (Figure 7.15).

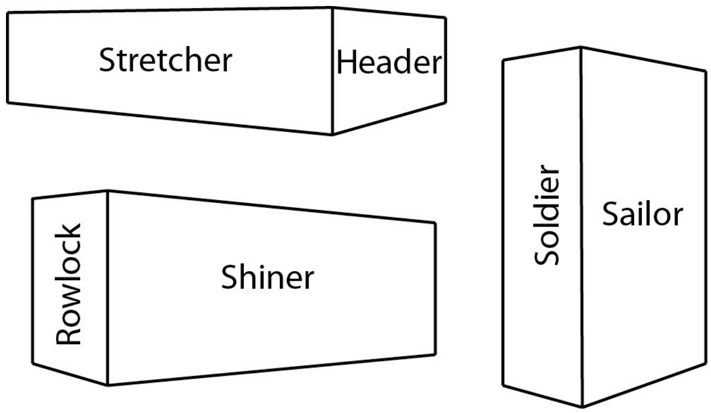


**Figure 7.13: Adobe brick orientations.**

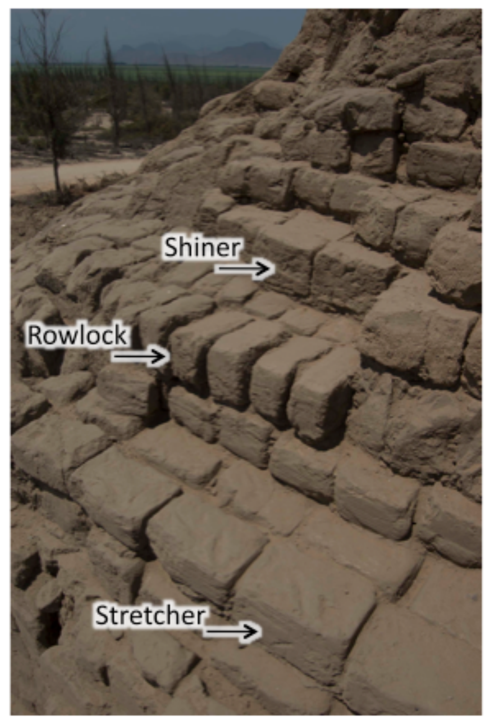


**Figure 7.14: Left: Huaca A Wall 1 showing that the bricks here are laid out in the header and stretcher position. Right: Huaca A northwest corner. Bricks here are laid out in a variety of positions including rows of rowlock and shiner laid bricks.**

[11] Some of the huacas were built in vertical segmented columns of stacked adobe brick. It has been proposed that these columns could have been erected by work gangs responsible for a quota of labor service Hastings and Moseley 1975). It has also been suggested that they were built in this manner to withstand earthquakes.

**Figure 7.15: Photo from the Huaca de la Luna demonstrating what segmented wall construction looks like (Tufinio 2004b:28).**

Other Construction Techniques and Features of Moche Architecture

*Huacas as Palimpsests*

The method of superimposing building stages of huacas is a notable feature of Moche architecture. Both the Huaca de la Luna and Huaca Cao Viejo reached their final forms though this method of construction, as was discussed in Chapter 3. Franco et al. (2010) suggest that the multiple superimposed huacas were the result of the repairs made from the damage caused by earthquakes and El Niños. They interpret the presence of sacrifices and offerings in the fill of each structure as offerings to the gods after catastrophic events. In a slightly different interpretation, Uceda (2010) suggests that the multiple superimposed buildings relate to closing and opening rituals possibly for events such as natural disasters, but also potentially related to changes in political rulers.

A similar technique was used in the construction of the two identified buildings of Huaca A. Also, as noted, sacrificial offerings were found in association with the fill of this huaca as well. Because of a lack of research, it is unknown how many other huacas were constructed in this manner. It is also unclear if this was mainly a feature of southern Moche huacas or if it was also present in the north. Furthermore, it is unknown if this construction technique is related to the age of the huacas and when they were constructed. Lockard (2005) notes that the huacas at Galindo were built in one phase, but this is a late site that was only occupied for 100-150 years. The huacas at Galindo may not have been in use long enough to receive multiple superimposed remodels or buildings. It has also been assumed that the Huaca del Sol was built in a single construction phase, though this huaca has received limited attention. Huaca del Sol is also a later Moche structure. More research is needed to better understand the spatial and temporal extent of this practice in the Moche world. However, as I have noted and as will be elaborated upon in the following chapter, Huaca A was built before Huaca B. This construction technique was not identified for Huaca B.

*Floors and Fill: Sand and Dunes*

Other construction techniques employed at Licapa II include the use of well-prepared clay floors filled with clean aeolian sand. This technique is seen in the lower levels of the lower eastern terrace of Huaca A. It is unknown, however, if the floors and sand fill span the entire Huaca or are localized to the eastern sector. The floor and fill technique is also seen between the construction phases on Huaca B. Swenson and Warner (2012) recorded the same construction technique for the Huaca Colorada in the Jequetepeque Valley. They also note that Huaca Colorada was constructed atop a modified sand dune. The entire site of Licapa II also appears to have been built on a series of sand dunes, with Huaca A having been built on a particularly large one. I suggest this because every excavation unit hit a level of clean, loose, sterile sand below the final occupation. Eventually, the sand gave way to angular rocky gravel. The sand layer was thicker in some places (Unit 4: 1.5 m), and less so in others (Unit 1: 50 cm). The abundance of sand on this site was the likely reason why it was used in the architecture. However, it is unknown if the sand played a part in why the site was located in this place or if it just corresponds with a period of increased dunation on the coast prior to the construction of Licapa II.

An increase in dunes can occur by mainly two factors, as noted in Chapter 2. First, dune encroachment is related to a drop in sea level that can occur when the waters cool during La Niña events. Sand is exposed on the shoreface and is carried by the wind inland (Shafer Rogers et al. 2004). Second, tectonic uplift can leave beaches stranded and winds can carry the sand inland (Moseley and Deeds 1982). As noted in Chapter 2, this sand tends to accumulate on the valley margins, which is where Licapa II is located.

Moseley and Deeds (1982) suggested that the Huaca de la Luna was in part abandoned because of the expansion of dune formation by or during Moche IV, which at the time of their writing was believed to have ended around A.D. 500 and was based on the Moche IV ceramic style. They also claims that there is evidence for a major El Niño event characterized by massive flooding after the sands covered structures in the area between the huacas. As noted, La Niña events, which cause increased dunation, often precede El Niño events. The timing of these events remains unclear since we now know the Moche IV style was used for much longer than originally thought and the entire Huacas de Moche complex was not abandoned by A.D. 600, as was originally proposed by Moseley (Uceda 2010). However, evidence from Dos Cabezas suggests that between A.D. 450-750 dunes encroached upon the site, which caused a major reorganization of the settlements and agricultural system in the Jequetepeque Valley (Moseley et al. 2008). Moseley et al. (2008) also suggest that there was a massive El Niño sometime in this timeframe as evidenced by erosion at Dos Cabezas, flood deposits throughout the lower Jequetepeque valley, and stranded agricultural fields on yardangs[12].

Therefore, it seems likely that this period of increased dunation could have occurred around the time Licapa II was first inhabited. This could possibly have been related to a particularly severe La Niña event, which is potentially suggested by the mollusk data presented above. The elevated levels of *Polinices* on Huaca A suggest that the structure may have been first used just following or during one of these cooling events.

The incorporation of sand into the architectural structure is also apparent for Huaca B. The front of Huaca B is characterized by a series of chambers that were filled with clean sand. If and how these chambers were used is not known. We also do not know if the interior of the huaca was constructed in the same way. However, the chamber and fill technique with sand is seen in Moche architecture during the late period at sites in the north, such as Pampa Grande and Huaca Colorada (Haas 1985; Shimada 1994; Swenson 2011b). Shimada also notes that there is a strong resemblance between

[12] Yardang: an elongated ridge carved from bedrock by wind and sand abrasion (Waters 1992:209).

the chamber and fill construction techniques at Pampa Grande and of those employed by the Maranga culture of the Rimac Valley on the central coast from the same time period (Shimada 1994). Incidentally, the only complete vessel we found in association with Huaca B was a double spout and bridge vessel with central coast characteristics located in one of the chambers.

The sand could have also been used as a termination ritual (Mujica 2007; Swenson 2011b; Uceda 2001). As has been discussed, there are many examples in the Moche world where huacas were terminated by covering them with rubble and fill before building a new building (Mujica 2007; Uceda and Tufinio 2003). However, no later construction supplanted the sand at Huaca B. The use of sand could have also held some other sacred function as will be explored below. In general, more research is needed to fully understand the use and possible function of the sand in this location and throughout the site.

*Narrowing of Spaces*

Another feature of Huaca B that exhibits patterns strikingly similar to those seen at Huaca Colorada is the narrowing of spaces through time. Swenson (2011b) notes that the main ceremonial spaces of Huaca Colorada were much larger in the earlier phases but were reduced in size with subsequent renovations. He cautiously interprets this as the physical manifestation of the elite's consolidation of power and their becoming increasingly more private and exclusive. He notes that this is markedly different from the decommissioning, burial, and reconstruction of larger buildings on top of earlier phase buildings at Huaca de la Luna, Huaca Cao Viejo, and as I note, Huaca A at Licapa II. At the late phase Huaca B, the ramp was narrowed by about a meter and the access was changed from entering the huaca via the large ramp to the north of the huaca, to a smaller and more restricted off-set entrance originating in the east and eventually turning towards the north. Although this narrowing could have been due to fixing damage sustained during an earthquake, as evidence does suggest (see Chapter 4), given the proximity of Huaca Colorada to Licapa II, their similar radiocarbon dates, and similar ceramic styles, it is likely that they were in close contact and shared aspects of the Late Moche/ Moche V ideology. The narrowing of spaces through time appears to have been one of these shared features and may be related to similar social dynamics.

Sacred Landscapes: Natural Features and Celestial Order

The incorporation of natural features into manmade structures was an important attribute of Moche huaca architecture through time and it probably served some ritual, religious, or political function, as it did in Inka times (Dean 2007, 2010). An architectural feature seen at Licapa II and at other Moche sites is the incorporation of large boulders into the architecture. Boulders align the first major terrace on the east side of Huaca A. Shimada (1994) also notes this practice at the Huaca Fortaleza at Pampa Grande. The use of sand could have been part of the same type of practice and could have referenced these huacas as mountains or other natural features.

Potentially a similar practice, at the Huaca de la Luna, Guadalupito, Mocollope and numerous other smaller sites in the Chicama Valley the huacas themselves incorporated extant hills and rocky outcrops into the construction. This practice intimately connects them to the surrounding landscape (Conklin 1990; Moore 1996; 2004; Uceda 2004). However, it is unclear if the act of bringing large boulders and sand to the huaca is a fundamentally different practice from building the huaca around natural features.

In Inka and possibly Wari times, important gods, or *Apus,* were the high mountain peaks (Williams and Nash 2006). The incorporating of natural features of the mountains into the construction of the manmade huacas could have been a way to legitimize their sacredness. *Cerros* are still considered sacred in the Andes today, as they were in the past, and have been related to water flow and other natural phenomena[13]. Moche huacas themselves can be considered man-made *cerros* and, therefore, "simulacra" of natural features that contain their power (Conklin 1990; Kolata 2003).

As discussed above, Huaca A and B are offset by 29-degrees. This offset angle makes it possible that the site was oriented with peaks of Cerro Azul. Looking at satellite images, the basic orientation of the site (Huaca A to Huaca B) follows the base of the mountain, suggesting that the huaca placement was possibly deliberate (Figure 7.16). They are also oriented towards the Quebrada de Cupisnique and the main access to the highlands. In Inka and earlier times aspects of the geography was considered sacred. Andean people often oriented structures with prominent landscape features (Bauer 1998; Urton 1981, 1996; van de Gauchte, 1999). Therefore, not only did the Moche incorporated aspects of the sacred landscape into the architecture itself, such as boulders, it is possible that they were also aligning the architecture with important geographic features. Moreover, if Huaca A faced to the east so that the ceremonies were performed

[13] A similar concept existed in Mesoamerica, where *atepetl,* the Nahuatl word approximating concepts such as town, city-state, territory, government, pyramid, or rulership, literally translates to "water mountain" (Lockhart 1993). The patron diety of a town, territory, or ethic group inhabited the interior of the *altepetl*. This deity was the progenitor ancestor, supplier of water and land, and protector of the people in his/her territory. This deity was worshiped either on top of a hill, or a temple was constructed on top of pyramid in the deity's honor (Lockhart 1993).

with Cerro Azul as the backdrop for the onlookers, this could also be related to this interplay of nature and culture in the Moche world.

Although the general orientation of the structures to one another runs along the same axis as Cerro Azul, the architecture of both huacas is oriented on an axis roughly 24 degrees east of north, an angle that may have had celestial significance (see Seoane 2011). We noticed while in the field that at high noon on the autumnal equinox (March 20th, 2010) no shadow was passed by the architecture. The importance of celestial cycles in the ancient Andes (Urton 1981, 1996) suggests that orienting the huacas at Licapa II at this angle may have been deliberate for cosmological purposes. Other astronomical alignments, such as those with Pleiades, the Milky Way or the solstices may have also been a feature of Licapa II architecture, but this needs further exploration. Overall, Licapa II could have had both geographical and cosmological significance imbedded in its general orientations.


**Figure 7.16: Plan view of Cerro Azul showing the basic orientation of the peaks of the cerro and the offset of the Huacas at Licapa II.**

## Architectural Functions

<u>Architecture and Power</u>

*Legitimization and Social Control*

Above I have reviewed some of the attributes of huaca architecture. There is also the issue of what huacas and huaca centers did and how they created a sense of awe and cohesion in society. Huaca centers were where Moche religion was carried out in its organized and elaborate form. As mentioned, many of the huacas were built at the foot of mountains known as *cerros*; some even incorporated parts of the *cerros* into the manmade architecture legitimizing their power and sacredness. Within this environment, rituals were performed at the huaca centers that likely included ritual battles, human sacrifice, and the presentation of goblets of blood to high priests or god-impersonators, all acts depicted on ceramic vessels and part of the Warrior Narrative and Sacrifice Ceremony.

Juliet Wiersema (2010) has recently reviewed ceramic architectural representations and correlated them to Moche monumental architecture. She has suggested that Moche IV architectural features from Huaca Cao Viejo and Huaca de la Luna become codified in Moche IV ceramics. These include such features as closed gabled structures, the warrior and captive frieze, and sunken steps. She relates the isolated features found in the imagery on the vessels to actual architectural features in the huaca centers and suggests that each individual feature was related to ritual processions surrounding the Warrior Narrative. By demonstrating that certain features within the architectural complexes were associated with specific activities associated with the Warrior Narrative she shows how Moche architecture structured and in many ways controlled the way religious acts were performed.

Social control can be accomplished through the manipulation of architecture and ceremonial space (Foucault 1977; Trigger 1990). Many scholars have noted that Moche architecture consisted of more restricted spaces through time (Bawden 1977; Chapdelaine 2002; Hecker and Hecker 1985; Moore 1996; Shimada 1994; Swenson 2011b). Earlier sites (pre 600 AD) contained large, highly visible huacas and large plazas. These huacas were the center of all political and religious activity at the site. As noted, many of the earlier Moche huacas were stepped platforms that increasingly grew in size through the superimposition of buildings. Uceda and Trufino (2003) have noted that each building at the Huaca de la Luna was likely interred corresponding to some event, such as the death of a ruler and the coronation of a new one. Many burials are found in the fill of each building, possibly as offerings to the temples themselves, the gods, or the deceased or the new ruler. The architecture, therefore, played an active role in the production and reproduction of social and political life and stood as a monument to the past, but also stood for the present authority. The superimposed Huaca A buildings, along with the possible burial within this huaca suggest similar function.

Later sites (post 650 AD) include huacas, but also incorporate other architectural features, such as platform structures with multiple rooms, extensive restrictive residential architecture, corridors that limit open movement, and storage areas (Bawden 1977; Shimada 1994). The additional types of architecture have been suggested to be the housing for the more bureaucratic and less religious arm of the society (Bawden 1977; Uceda and Tufinio 2003). Whereas religious and political activities were blurred and undertaken in the same structure in earlier times, later times saw a more strict division between the religious and the political. Therefore, the addition of these features has been interpreted as the result of increased social segregation and increased secularization (Bawden 1977; Chapdelaine 2001, 2002; Uceda and Trufino 2003; Uceda 2010).

Internal division of space within the huacas themselves seems to have increased, which decreased their accessibility though time as well (Haas 1985; Swenson 2011b). Swenson notes that while earlier phased huacas grew out and larger, the later structure of Huaca Colorada in the Jequetepeque Valley retracted inward with increased narrowing of spaces and restriction of accesses. The same pattern of narrowing of spaces was noted for Huaca B at Licapa II.

*Temples vs. Palaces*

The issue of spaces becoming more restricted and private through time is linked to the issue of the temple vs. the palace. Uceda (2010) has long claimed that Huaca de la Luna was a temple and that the Huaca del Sol was a palace, but no research was done to confirm this hypothesis or explore the implications of this claim. Temples and palaces are Old World concepts that have their roots in the cultures of the ancient Near East (Pollock 1999; Van de Mieroop 2004). A temple is a place of worship associated with supernatural forces, or deities, and religious dogma. In the ancient Near East temples were also associated with the distribution of agricultural goods (Van de Mieroop 2004). Evans and Pillsbury (2004) define a palace as the residence of a ruler or lord and the central locus of political, social, economic and ritual activities in a complex society. Tufinio et al. (2012) define a palace in a strict sense and claims that they are solely the houses of kings and lords and do not have public spaces reserved for worship or other ritual activities. In the Near East, the temple and the palace functioned together. They were not opposing forces, yet what they stood for could create tension within a society (Van de Mieroop 2004). Temples, or the houses of the gods, were the earthly possessions of divine kings who resided in the palace. However, the gods were seen as having the ultimate power within the society. Furthermore, on a more functional level, both the temple and the palace were intimately linked to the functioning of the economy. Their dual presence created a tenuous dichotomy in Near Eastern society between the secular and the divine (Pollock 1999).

At the time of my fieldwork no formal work had been conducted at the Huaca del Sol. However, in 2011 the Huaca de la Luna project started an excavation program there. The excavations uncovered evidence for both private and public spaces. Tufinio et al. (2012) propose that rather than representing a palace, the Huaca del Sol was a temple-palace, used as the residence for the Moche rulers, but also as a public temple for worship. They define the term temple-palace as a residential structure for the rulers, but also containing areas for worship and feasts (Tufinio et al. 2012:302). Therefore, their temple-palace is quite similar to the definition of just a palace provided by Evans and Pillsbury (2004). However, the concept does not fit well with the traditional Near Eastern understanding of these buildings, as will be elaborated on below.

Tufinio et al. (2012) and Uceda (2010) claim that in the earlier phases, the temple of the Huaca de la Luna was reserved for strictly religious acts and ceremonies associated with a theocracy. In the later phases the Huaca de la Luna was abandoned to accommodate the increasing power of the urban class and a move towards secularization. The temple-palace of the Huaca del Sol was in use after the collapse of the Huaca de la Luna and after A.D. 600 (Tufinio et al. 2012). Therefore, Tufinio et al. (2012) suggest that concept of the temple-palace follows the idea that Moche society was becoming more secular in the later phases because now the power resided with the ruler at his home and not in the temple with the gods. It should be noted that the New Temple was in use after the abandonment of the Huaca de la Luna (Old Temple) as well. However, Uceda et al. (2011a, 2011b) claim that it was reserved for elite members of the urban society and was not dedicated to the same type of public religious ceremonies as the Huaca de la Luna. The realistic murals and narrow spaces, they claim, attest to its more secular and private nature and departure from earlier theocratic rule (Uceda et al. 2011a, 2011b). Therefore, its function in Moche society was completely different from that of the Old Temple.

Since the concept of the temple and the palace are western, they may not be appropriate to apply to the ancient Andes. There has been much criticism of scholars who have attempted to label certain structures as palaces (*pace* Conrad 1981, 1982; Day 1982) and discussions of elite residences as palaces in the Andes for the most part have been avoided (see Pillsbury 2004; cf. Chapdelaine 2006). The problem with the temple-palace is that it suffers from the same problem. Temple-palace combines two distinct Old World concepts into a new term that does not take into account the original dichotomy that existed between the two. In the ancient Near East temples and palaces were used simultaneously and represent the divine and secular. In Moche society, it would seem as though palaces postdate temples, even if "temples" continued to be used in some capacity, albeit differently than their earlier iterations (e.g. The New Temple).

I contend that the terms temple and palace are not useful in their traditional sense. However, the identification of "temples" and "palaces" in Moche society may be related to the changes in the structure of the society that happened over time. It can be suggest that earlier "temples" are associated with the Moche gods and divine powers, and later "palaces" reflect the increased secularization of Moche rule. The differences in functions between the Huaca de la Luna and the Huaca del Sol seem to be an attribute of their uses, which relates to when in the history of Moche occupation these types of structures were prevalent.

Thus far I have avoided the temple vs. palace debate for the site of Licapa II, even though the forms and activities performed at the huacas at Licapa II, as well as the dates of the two buildings, could suggest a similar dichotomy as what is seen at the Huacas de Moche. The concept of the palace, or temple-palace as proposed by Tufinio et al. (2012), for the Huaca del Sol may fit the model for Huaca B. This is assuming that there were residences there and that it was used for civic-ceremonial purposes. Likewise, if, as Uceda claims, Huaca de la Luna was a temple, Huaca A in form and function has attributes that may fit this model. However, even if we do not use the western terms of temple and palace, when evaluating the form and function of Huaca A and the Huaca de la Luna, and Huaca B and the Huaca del Sol, interesting parallels can be drawn.

A similar shift in the settlement and use patterns is apparent at Licapa II as at Huacas de Moche. Huaca A and the Huaca de la Luna were both the first structures on the sites and both appear to have been dedicated to worship and aspects of the Moche religion. Huaca A, although not abandoned, as will be addressed in the following chapter, ceased to be used in the same manner some time around A.D. 600. It was also around this time that Huaca B was built and Moche IV and V ceramics were introduced. The spaces associated with Huaca B are comparable to those seen at Huaca del Sol and also at Huancaco (Tufinio et al. 2012). These include public areas for ceremonies and feasts as well as the areas of restricted access. It was also after 600 AD when the domestic area between the huacas was first used, which is relatable to the interpreted increased power of an urban class at Huacas de Moche (Chapdelaine 2002), or some other kind of change. Overall, the changes through time seen at Licapa II, from the construction of Huaca A to that of Huaca B reflect a similar pattern seen at Huacas de

Moche. However, I do not believe that there is enough evidence to suggest that Moche society underwent a change from a theocracy to a more secular system based on the evidence from Licapa II, but parallel changes did occur at these two centers that do reflect societal change.

Overall, although the layout of the site and the forms and construction techniques of the huacas at Licapa II are different from those at Huacas de Moche, the huacas may have functioned in a similar manner, which reflects the shifts and changes in Moche society through time. It can be said that the earlier phase of Moche was dominated by the "temple" and the later phase by the "palace," but as discussed, these terms may be inappropriate and obfuscate the complex changes that were occurring in the Moche world through time. Nonetheless, architectural changes from inclusive highly visible structures to exclusive structures with intimate spaces did occur in the Moche world, and these changes are reflected in the architecture at Licapa II.

Architectural Scale

Finally I turn to the sizes of different Moche centers. Scale is potentially an important factor in the function of Moche architecture at a single site and between sites. As I have noted, Licapa II is a mid-sized center based on the size of the huacas compared to other Moche huacas. There is an assumption that the largest centers were the most powerful (Trigger 1990), which was not always the case. The size of the center could have been an attribute of its function, or the types of activities and rituals performed there. However, size can tell us about the organization of resources. Factors such as building material availability and engineering are pertinent when undertaking monumental constructions, but a ruler's ability to amass labor was his number one asset.

I now return to what we know about organizational principles from the colonial period in the Chicama Valley as addressed in Chapter 1. Based on patterns seen in the Nepeña Valley, Moore (1995) contends that the proportion of the sizes of the settlements with public architecture reflect what we would expect if a *cacique principal* could access twice as much labor as was available to the *segunda persona,* who in turn could access more labor than the lesser lords. Therefore, the huaca belonging to or under the control of the *cacique principal* would be the largest in his particular *parcialidad,* but not necessarily the largest in the valley. This pattern, as Moore notes, is identical to what we would expect in a typical site-size ranking settlement hierarchy associated with state-level societies (Falconer and Savage 1995; Wright and Johnson 1975). Other settlement pattern models such as central place theory (Marcus 1976) or models of compromise (Conrad 1978) could also potentially produce the same results depending on how the settlements are distributed throughout the valley. However, in Moore's schema very different principles of organization are at work and historical circumstances are favored over models developed in other parts of the world or primarily based on other factors, such as economics.

Although it may not be appropriate to project the colonial era back on Moche times, a close evaluation of this model can lead to some potential insights on Moche political organization. The rituals performed at the huaca of the *cacique principal* (potentially there was one in each valley, or one for every few valleys that shifted though time) would have been paramount to the society below this leader. Ceremonies at the huacas of the *segunda persona* and the other *principales* could have been nested in terms of who participated in which rituals and who used each huaca. Therefore, if a site such as

Licapa II was under the control of a *segunda persona*, for example, and the *cacique principal* was located at Mocollope, then people from Licapa II could participate in ceremonies at Mocollope. However, the reverse would not necessarily have been the case and people from Mocollope may not have had reason to travel to Licapa II.

In the colonial era, below the level of the lesser lords, the *parcialidades* were formed by groups with people of different economic specializations (Ramírez 1996). There would have been different requirements for each of these groups in terms of what they needed from other groups and for themselves. For example, agriculturalists would have depended on fishermen and hunters for protein. Ceramicists would have depended on all of the above for food. Economic transactions at the different huaca centers could have drawn people together dependent on reciprocal needs. Bonds between the different social sectors could, in turn, be reinforced by ceremonies performed at the huacas, similar to the effects of *tinku*[14] battles today and in the past. A similar model has been noted for the various polities coming together at the site of San José de Moro, as was explained in Chapter 3.

Although the segregation of society in this manner may not have been so strict in Moche times as it was during the early colonial period, this is a useful model for thinking about the political organization of Moche society. The pattern of huaca centers of

[14] Ritual battles between moieties, known as *tinku* in Quechua, served to foster fertility and balance throughout the Andes. In Inka times, the state sponsored and oversaw these competitions. The purpose of these battles and competitions between the moieties has been interpreted as "symmetric justice" or "equilibrium wars" (Gelles 1995). Although today the word *tinku* in many ways is synonymous with ritual battle, the actual meaning of *tinku* in Aymara and Quechua is "coming together" to achieve balance and where this occurs is considered sacred (Gelles 1995). In this respect *tinku* refers to any two parts that come together to make a whole. This can be two branches of an irrigation canal meeting up to form one large branch, the confluence of two rivers, the seam holding two pieces of cloth together, or two separate channels of a stirrup spout bottle, a ceramic form ubiquitous in Moche times (Ossio 1992; Quilter 2010b). This balance is also related to the concept of "the center." Huaca centers could have been the place where multiple groups came together in ritual to achieve societal balance.

different sizes, architectural forms and use of different construction techniques could be explained as a function of the abilities of the nested powers of the elites and markers of the different specializations, or identities, of the *parcialidades* they controlled. This concept in relation to the patterns seen at Licapa II will be further addressed in Chapter 9.

On a final note, Huaca A and Huaca B are on opposite sites of the canal that runs through the site. Drawing on Netherly's (1984) work on colonial era organization and Inka models[15], Netherly and Dillehay (1986) note that canals could have been used as a dividing line within a site to physically mark the upper and lower moiety divisions of prehistoric societies on the north coast of Peru. They note that the north side was typically associated with the higher ranked moiety and the southern side the lower ranked moiety. The material remains associated with Huaca A and the south side of the canal were different from those associated with Huaca B and the north side. Although there are temporal differences in the use of these sectors of the site, as has been discussed, it is also possible that the differences could be related to internal divisions of space on a site level and may have corresponded to different groups of people, activities, or functions of the northern and southern sectors. Engaging with some of these possibilities may bring us closer to understanding Moche political organization.

### Licapa II Architecture in the Moche World

While the exact forms and overall internal design of the huacas may be unique to Licapa II, both the forms and the methods used draw on Moche cannons seen elsewhere in the region from earlier time periods and the same time frame. These variations in

[15] The Inka divided their capital city, Cuzco, into two parts known as *hanan* and *hurin* (D'Altroy 2002:89). They were ranked, but unequally parallel rather than hierarchical. *Hanan* was the upper part of the city and was ranked slightly above *hurin*, the lower city. These two sectors were socially divided as well into *anansaya*, upper moiety, and *urinsaya*, lower moiety.

techniques suggest a dynamic environment of interaction between the people residing at the various Moche centers and do not point to a pattern of a single site dominating or controlling other sites. The variations in huaca architecture indicate that standardization was not practiced, possibly suggesting the relative autonomy of the various centers. This lack of standardization is also indicated in the ceramic data presented in the previous chapter. Overall, these patterns suggest that the people of Licapa II were not under the control of a dominant center, but were participating in a dynamic Moche world.

Although Moche architecture on the whole is complex and not standardized, some similar patterns can be identified between sites as has been detailed above. Some of these patterns may be related to the fact that certain huacas were used for similar purposes, as in the case of Huaca A and the Huaca de la Luna and Huaca B and Huacas del Sol.

Evidence suggests that sometime around A.D. 600 the Moche ideological system underwent significant reconfiguration when the Huaca de la Luna was abandoned at the Huacas de Moche and the focus of the site was shifted to the New Temple and the Huaca del Sol. Huaca A possibly represents an earlier manifestation of Moche ideology reflected in the architectural configuration and style. Huaca B architecture may be more in line with later Moche conceptions of social order. Therefore, the timing of the events, such as the construction of buildings at Licapa II and elsewhere in the Moche world is key to understanding settlement relationships. In the following chapter radiocarbon dates will be further explored to understand which sites were occupied at the same time as Licapa II, and what materials, mainly ceramics, characterized these different settlements.

# CHAPTER 8

## RADIOCARBON DATING LICAPA II AND EXPLORING MOCHE CHRONOLOGY

In this chapter I review the 26 radiocarbon dates from Licapa II to show how the site expanded and changed through time. Through my analysis, I show that there were two phases of occupation at the site. The first phase began sometime around 450-500 AD and consisted of Huaca A and Licapa A ceramics. Sometime around 600-650 AD Huaca B and its platform were constructed and Moche IV and V ceramics were adopted. The two styles persist together until the abandonment of the site around 900 AD.

In this chapter I also note some potential problems encountered when comparing dates from different laboratories and different materials. I warn that radiocarbon samples must be carefully chosen and that a great deal of background research should be performed when working with the dates published by other scholars.

In the last part of this chapter I compare a series of dates from seventeen Moche sites to the new dates I obtained from Licapa II. I show that the change that happened at Licapa II around 600 AD is also apparent at other Moche centers. Finally, I present data to show that the currently accepted dates for Moche (A.D. 1-800) need to be revised to A.D. 300-900.

### Radiocarbon Dating

Radiocarbon dating is a technique for dating organic materials from the Late Pleistocene through the Holocene and was developed by Willard Libby and colleagues in the 1940s (Libby et al. 1949). All organisms take up carbon as part of the food chain and through metabolic processes. Carbon is found in the atmosphere and has three isotopes $^{12}C$, $^{13}C$, and $^{14}C$. The $^{12}C$ isotope is the most abundant at 99%, where as there is 1% of $^{13}C$, and one part in a million million $^{14}C$ (Bowman 1990). Both $^{12}C$ and $^{13}C$ are stable, but $^{14}C$ is unstable and weakly radioactive. When an organism dies it ceases to take up carbon. As time passes, since $^{14}C$ is unstable the level of this isotope falls at a constant rate determined by the law of radioactive decay (Bowman 1990). The half-life, or the amount of time it takes for half of the $^{14}C$ to decay, is 5,730 years[16]. Therefore, measurement of the amount of $^{14}C$ remaining in a dead organism will give the approximate date of its death.

However, the atmosphere has not had a constant $^{14}C$ concentration over time due to a variety of factors, including changes in the Earth's magnetic field, solar activity, and changes in the carbon cycle (Bowman 1990). Therefore, the radiocarbon age needs to be converted to calendar years through calibration. Dendrochronology, or the science of dating using tree-rings, has made this calibration possible to 12,600 years ago. Tree-rings of a known date have been radiocarbon dated to produce a calibrated radiocarbon curve, which is periodically updated as more data are acquired (Figure 8.1). The oscillations in the curve are a product of the variations of $^{14}C$ in the atmosphere over time. Flat spaces, sometimes called benches, or plateaus, as well as peaks and troughs in the curve can make the calibrated age of a sample difficult to interpret, as will be explored below.

[16] For historical purposes the Libby half-life of 5,568 years is used in radiocarbon dating (Bowman 1990).

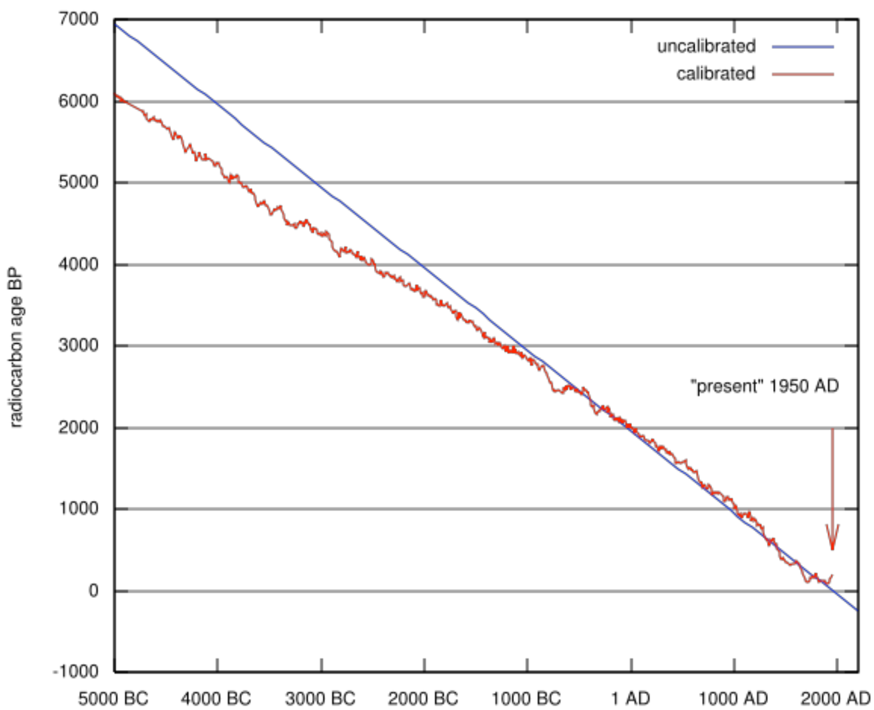


**Figure 8.1: Predicted radiocarbon curve shown in blue vs. dendrochronologically calibrated radiocarbon curve shown in red.**

For many years there was no agreed upon calibration curve, since many different laboratories produced their own versions (Reimer et al. 2009). Various curves were created with different tree-ring sequences mainly from the Northern Hemisphere. Currently, the IntCal09 curve, which is a composite collaborative curve agreed upon by an international committee of international experts, is the international standard. It is based on dendrochronologically dated tree rings for the period 0-12,600 cal year before present (BP, with 0 BP being AD 1950). For the period 12,600-50,000 cal yr BP, the curve is derived from numerous records including marine archives (corals and planktonic foraminifera) and speleothems correlated with tree ring and climatic data, such as $\delta^{18}O$ from ice cores (Reimer et al. 2009). However, using trees from Chile, Tanzania, and New Zealand, recently McCormac et al. (2004) determined that the shifting levels of $^{14}C$

were different in the Southern Hemisphere. They created a separate calibration curve (ShCal04) that should be used for the Southern Hemisphere based on these differences. The ShCal04 curve can be used for materials up to 11,000 cal years. The offset between the Northern and Southern Hemisphere curves, known as the inter-hemispheric $^{14}C$ offset, is roughly 40 yr but varies with time. For the Moche period using the IntCal09 vs. the ShCal04 curves can produce dates up to 100 years different. This is significant because when radiocarbon dates are compared across sites, as I do for 18 Moche sites below, it is imperative that the same calibration curve is used. The ShCal04 curve is used for all calibrated dates presented in this dissertation.

**Licapa II Radiocarbon Dating**

To place Licapa II in temporal context relative to other Moche sites and to understand the chronological development of the site itself, I sent 26 radiocarbon samples for dating. Twenty of the samples were sent to the National Science Foundation radiocarbon lab in Tuscon, Arizona, and six were sent to Beta Analytic, Inc. in Miami FL. Archaeologists heavily rely on radiocarbon dates, which are produced at various labs around the world. I was curious to see if similar results would be obtained from the same sample sent to two labs and if we can just trust the dates given by the different labs at face value. I will discuss this more below.

The radiocarbon samples were taken from a variety of contexts in an attempt to obtain a representative sample from the site's occupation. However, it should be noted that there are no samples from the uppermost levels of Huaca B or the area between the Huacas because of the increased chance of contamination from the extensive looting in these locales. Radiocarbon samples, however, were obtained from the upper contexts of

Huaca A. Because I determined that Huaca B was in use longer than Huaca A, I suggest that if datable material were available from the upper contexts/ surfaces for the entire site, the dates for these materials would demonstrate that the southern sector of the site was occupied for a longer period of time than the northern sector of the site.

In Table 8.1 I present the radiocarbon dates from Licapa II. All of the dates were calibrated with OxCal 4.1 (Bronk Ramsey 2009) an open source calibration software using ShCal04 (McCormac et al. 2004). In this table, the Sample ID number contains information relevant to the context. For example, for Sample ID L2-U4-N7-O2-2, L2 is an abbreviation of Licapa II (L2), Unit 4 (U4), Level 7 (N7), Bag 2-Sample 2 (O2-2). A star, next to the NSF sample number, indicates that there are two samples of the same material that were run at the two laboratories. Also included in this table is the laboratory name, the laboratory ID, material, the $\delta^{13}C$ value, the fraction modern, the radiocarbon year and uncertainty, the ShCal04 95.4% probability calibration, and the context of the dated material. Figure 8.2 shows the probability distributions of these calibrated dates graphically[17].

I tried to date small twigs and annual plants, such as seeds and corn where possible to obtain the most accurate date. These are noted in the materials column in Table 8.1. However, in contexts where short-lived plant materials were not found, wood charcoal was collected and dated.

[17] Highest probability ranges are calculated as the shortest range that includes 95% or 68% of the probability density function. These values are used for comparability with 1 and 2 standard deviations, but they are not 1σ and 2σ because the radiocarbon distributions are not normal. Therefore, quoting a 1σ and 2σ range is incorrect.

## Table 8.1: Radiocarbon dates from Licapa II

| Lab | Lab ID | Sample ID | Material | $\delta^{13}C$ | Fraction Modern | $^{14}C$ | ShCal04 Cal AD 95.4 % | Context |
|---|---|---|---|---|---|---|---|---|
| HUACA A: Unit 1 | | | | | | | | |
| NSF | AA94804 | L2-U1-N4B-O1* | Wood Charcoal | -27 | 0.8346±0.0037 | 1453±36 | 580-680 | Wood Feature on low terrace of first building, west facade Huaca A |
| Beta | Beta-302515 | L2-U1-N4B-O1 | Wood Charcoal | -25.6 | 0.8411±0.0031 | 1390 ±30 | 650-770 | Wood Feature on low terrace of first building, west facade Huaca A |
| HUACA A: Unit 2 | | | | | | | | |
| NSF | AA94806 | L2-U2-N4E-O3 | Wood Charcoal | -26.1 | 0.8215±0.0037 | 1579±37 | 430-620 | Floor 4C |
| NSF | AA94808 | L2-U2-N7E-O1 | Wood Charcoal | -25.5 | 0.8291±0.0037 | 1506±36 | 550-660 | Floor 7E |
| NSF | AA94805 | L2-U2-N4E-O4 | Charred Seed | -22.3 | 0.8270±0.0037 | 1526±36 | 470-650 | Floor 4A |
| NSF | AA94807 | L2-U2-S.ext-N10-T1-O1* | Charred Corncob | -10.5 | 0.8285±0.0037 | 1512±35 | 540-650 | Inside ceramic basin overlaying burial in Tomb 1 |
| Beta | Beta-302517 | L2-U2-SN10-T1-O1 | Charred Corncob | -11.8 | 0.8338±0.0031 | 1460±30 | 580-670 | Inside ceramic basin overlaying burial in Tomb 2 |
| NSF | AA94811 | L2-U2-N3-O1 | Charred Corncob | -11.2 | 0.8308±0.0037 | 1489±36 | 560-660 | Adobe Floor Level 3 |
| Beta | Beta-302516 | L2-U2-N3-O2 | Charred Seed | -22.8 | 0.8411±0.0031 | 1390±30 | 650-770 | Adobe Floor Level 3 |
| NSF | AA94810 | L2-U2-N1-O2-2 | Burnt textile | -24.4 | 0.8266±0.0040 | 1529±38 | 440-660 | Offering associated with Tomb 1, Unit 2 |
| NSF | AA94809 | L2-U2-N1-O2-1 | Charred Reed | -27.3 | 0.8320±0.0046 | 1478±45 | 550-670 | Offering associated with Tomb 1, Unit 2 |
| BETWEEN THE HUACAS: Unit 3 | | | | | | | | |
| NSF | AA94818 | L2-U3-N7-O4 | Wood Charcoal | -26.7 | 0.8389±0.0036 | 1411±34 | 610-770 | From fire pit just below floor 6 |
| NSF | AA94813 | L2-U3-N6-O1 | Small Stick Charcoal | -26 | 0.8264±0.0037 | 1531±36 | 440-650 | From around a jar on sterile |
| Beta | Beta-302518 | L2-U3-N6-03 | Charred Seed | -24.9 | 0.8432±0.0031 | 1370±30 | 650-770 | From around a jar on sterile |
| NSF | AA94817 | L2-U3-N6-Fg1-O1 | Wood Charcoal | -25.8 | 0.8420±0.0039 | 1382±37 | 650-770 | Fire pit associated with floor 6 |
| NSF | AA94816 | L2-U3-N5C-O2-2 | Charred Seed | -20 | 0.8421±0.0039 | 1381±37 | 650-770 | Fire pit associated with floor 5C |
| NSF | AA94815 | L2-U3-N5C-O2-1 | Charred Seed | -23.1 | 0.8475±0.0039 | 1329±37 | 660-870 | Fire pit associated with floor 5C |
| NSF | AA94812 | L2-U3-N4-R4-O4 | Charred Seed | -26.9 | 0.8568±0.0038 | 1242±36 | 710-970 | From *cuy* pen |
| NSF | AA94814 | L2-U3-N3D-RA-O1 | Small Stick Charcoal | -26.5 | 0.8552±0.0038 | 1256±36 | 690-950 | From hearth south of *cuy* pen |
| HUACA B PLATFORM: Unit 4 | | | | | | | | |
| NSF | AA94810 | L2-U4-N7-O2-2 | Charred Seed | -21.4 | 0.8169±0.0036 | 1624±35 | 410-580 | On sterile sand, first evidence of occupation in this area, associated adobe wall |
| NSF | AA94819 | L2-U4-N7-O2-1* | Charred Corncob | -11 | 0.8223±0.0036 | 1572±35 | 430-620 | On sterile sand, first evidence of occupation in this area, associated adobe wall |
| Beta | Beta-302519 | L2-U4-N7-O2-1 | Charred Corncob | -10 | 0.8328±0.0031 | 1470±30 | 580-670 | On sterile sand, first evidence of occupation in this area, associated adobe wall |
| NSF | AA94821 | L2-U4-N5C-O1 | Small Stick Charcoal | -25.1 | 0.8395±0.0036 | 1406±35 | 620-770 | Floor 5C |
| NSF | AA94823 | L2-U4-N5B-O1 | Wood Charcoal | -25.9 | 0.8361±0.0036 | 1437±34 | 590-760 | Floor 5B |
| Beta | Beta-302520 | L2-U4-5PR-01 | Wood Charcoal | -18.5 | 0.8527±0.0032 | 1280±30 | 690-890 | Fill between floor 5 and 5B |
| HUACA B: Unit 5 | | | | | | | | |
| NSF | AA94822 | L2-U5-N2-V1-O1 | Wood Charcoal | -25.8 | 0.8414±0.0038 | 1387±36 | 650-770 | From inside vessel on floor 3, chamber 5 |

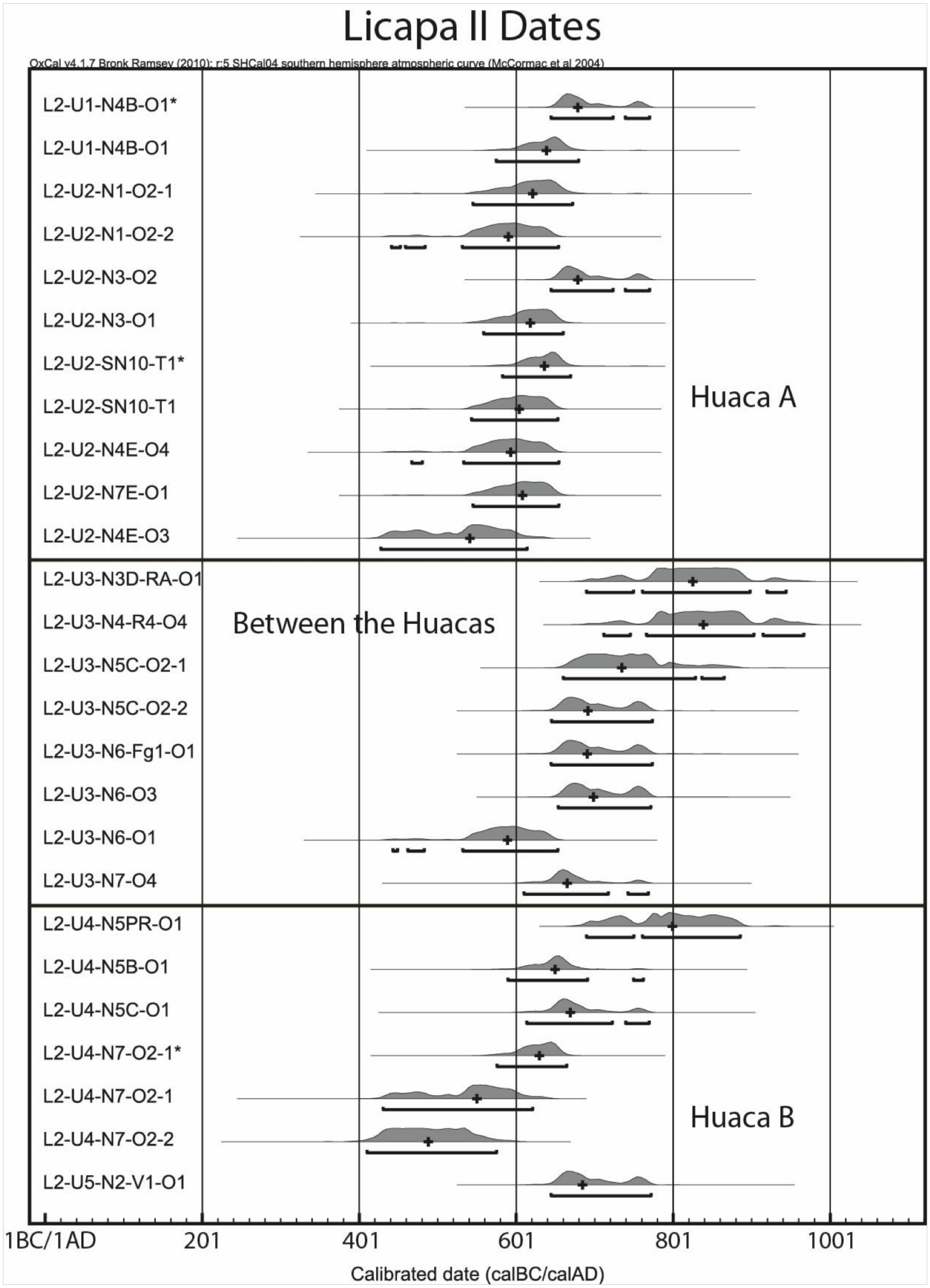


**Figure 8.2: Probability distributions of radiocarbon dates from Licapa II. The radiocarbon curve is in gray, the cross in the center of each date is the weighted median and the black line under the curve shows the 95.4% probability margin.**

The majority of the dates from Licapa II fall between A.D. 500 and 850, as is expected based on their stratigraphic contexts and associated material remains. What is most interesting about the dates is that we can see a clear chronological progression of the construction of the site. The construction of Huaca A marks the first building in the monumental core of the site. The earliest date from Huaca A (A.D. 430-620) comes from Floor 4C, which was the lowest floor in the structure that we excavated. However, there may still be lower floors deeper within Huaca A that we did not reach in 2010. The burial and series of offerings found on the flat area above Wall 1 on the east side of the huaca all date from A.D. 540-670. However, the textile with reed from this offering has a longer time range that spans from A.D. 440-660. The burned area near the surface to the east of the terrace Wall 1 yielded two dates; A.D. 550-650 from a charred corn cob and A.D. 670-770 from a burnt seed. Although these two dates come from the same burned area, they were dated by different labs and thus yielded different results. This could be because the burned area was located on the final use surface of the huaca. This area could have been left exposed and used multiple times in the past, thus explaining why it contained annual plants that yielded very different dates. The discrepancy in these dates could also indicate contamination, or another problem, as will be addressed below.

Aside from the date from the burned area on the east side of the huaca, the other late dates from Huaca A come from the wooden feature on the first terrace of the western façade (Figure 4.9). From there, two dates were produced from a single piece of wood and date to A.D. 580-680 and A.D. 650-770. These two dates are also quite different, which could be an example of the "old wood" problem. The "old wood" problem results from one of two scenarios. First, when the material dated is from a large tree, the inner tree-rings could be hundreds of years older than the outer rings. Second, the tree could have been felled decades, if not centuries, earlier and used in a variety of contexts before its final deposition. In the desert environment of northern Peru, where trees are not abundant this scenario is quite likely.

If this is an example of old wood, then the later date should be considered more appropriate. The A.D. 650-770 date suggests that the west side of the huaca continued to be remodeled after the completion of the final phase of construction on the east side. This is because the wooden feature was eventually covered with adobe bricks in the last remodeling of the huaca. The bricks used to cover the feature were larger than any of the other bricks found on the site. As noted in Chapter 7, the large bricks were associated with a late construction phase at the site. This indicates that the remodeling on this side of the huaca took place towards the end of the use of the site and well after the initial construction and use of Huaca A.

The evidence for the late dates prior to the final façade on the west side of Huaca A, in addition to the late date obtained from the burnt area on the final use surface on the east side suggests that Huaca A continued to be used in some capacity while the rest of the site was in use. However, the early dates from Huaca A indicate that it was the first structure on the site. As discussed in the previous chapter, it is possible that the use, function, and significance of this building changed over time as the site expanded to include Huaca B and the residential area between the huacas.

After the construction of Huaca A, yet during its use, Huaca B was likely constructed. The majority of the dates from Huaca B and the Huaca B platform postdate the dates from Huaca A. However, there are also early dates from vegetal remains below the level of the Huaca B platform associated with a line of adobes on clean sterile sand (L2-U4-N7-O2-1, L2-U4-N7-O2-1*, and L2-U4-N7-O2-2). One possible Moche III/IV sherd was found in this level as were the monkey bones discussed in Chapter 5. No occupation was found below this level. This suggests that people were engaged in some activities on this part of the site prior to the construction of the Huaca B platform and while Huaca A was under construction and in use. The only date that we have from Huaca B itself dates to A.D. 660-770 and is associated with a vessel from the earlier phase of construction we excavated. This vessel was found in association with floor 3 in Chamber 5 (Figure 4.38, Figure 4.39). The final occupation of Huaca B was not dated.

The dates associated with the floor surfaces of the platform to the north of Huaca B range from A.D. 590-890 (L2-U4-N5C-O1- floor 5C, L2-U4-5B-O1-floor 5B, and L2-U4-N5PR-O1- The fill between floor 5B and floor 5). Again, we do not have a date from the last floor of the platform (floor 5) due to the possibility of contamination from looting and because no suitable charcoal was found associated with this floor. Reviewing these dates suggests that the Huaca B sector of the site was in use and remodeled at least three times after the final dated events took place on the east side of Huaca A. However, we do not have dates from the lowest level of construction of Huaca B itself, so there is the potential that there was a significant time overlap between the two huacas that we did not uncover. However, the ceramic evidence, as well as the activities performed at the huacas, as discussed in Chapters 6 and 7, suggests that these building, although overlapping in use, were probably not contemporaneously built.

The clearest evidence suggesting that Huaca A was the earliest structure on the site comes from between the huacas. The earliest date from the residential area between the huacas comes from a piece of charcoal associated with a vessel on sterile soil. It is possible that this was a piece of "old wood," but nonetheless it dates to A.D. 440-650. The reason I suggest it was "old wood" is that the rest of the dates from earliest levels cluster between A.D. 610-770 and are associated with Moche IV and V vessels. This includes a date obtained from a seed from the same context as the wood, but was sent to a different lab. This will be further discussed later in the chapter.

The uppermost level dated in Unit 3 was level 3D. In this level we found the remains of the *cuy* pen with a Moche V stirrup spout ceramic embedded in matting and coprolites. This level dated from A.D. 690-950. There were four subsequent layers on top of level 3D, including the final platform, from which we did not obtain a date, suggesting a late usage of this sector of the site.

Below I compare dates form Huaca A and Huaca B using Bayesian statistics. As discussed in Chapter 7, I believe that Huaca A represents a possible earlier manifestation of Moche ideology reflected in the architectural configuration and style. Sometime around A.D. 600 the ideological system underwent significant reconfiguration when the Huaca de la Luna was abandoned at the Huacas de Moche and the focus of the site was shifted to the New Temple and the Huaca del Sol. Around this same time changes are seen throughout the Moche world, as will be discussed in the final section of this chapter. In the following section, however, I statistically compare the dates from the two huacas at Licapa II to understand if the timing of this architectural and ideological shift can be supported by the $^{14}C$ data from this site.

## Comparing Huaca A to Huaca B using Bayesian Statistics

The best way to compare radiocarbon dates, which are non-normal probability distributions, from a single site or even between sites it to use Bayesian methods. This approach is very useful when building and refining chronologies and involves using prior knowledge about the archaeological context from where a radiocarbon sample was procured.  Bayes' Theorem (1736) states that new data (known as 'standardized likelihoods') should be analyzed based on our prior knowledge of the problem ('prior beliefs').  With this knowledge we can gain a new understanding of the problem that takes into consideration both the new and existing data ('posterior beliefs') (Bayliss et al. 2007; Kennett et al. 2011) (Figure 8.3).

$$\underbrace{P(parameters)}_{\substack{\text{Prior Belief} \\ \text{(Stratigraphic Context or} \\ \text{Diagnostic Assemblage)}}} \times \underbrace{\frac{P(data|parameters)}{P(data)}}_{\substack{\text{Standardized Likelihood} \\ \text{(Probability Function +} \\ {}^{14}\text{C Date)}}} = \underbrace{P(parameters|data)}_{\substack{\text{Posterior Belief} \\ \text{(Modeled Date)}}}$$

**Figure 8.3: Diagram of the Bayesian method for 14C dates.**

In radiocarbon models the prior belief can be stratigraphic context, diagnostic artifact assemblage, or any other information that can be used to constrain the date.  The standard likelihood is the probability function of the new data, which in this case is the calibrated radiocarbon date.  The posterior belief is the modeled date, which is constrained based on the prior information provided.

To build a Bayesian model, well-contextualized radiocarbon dates are needed. These can be from one excavation unit, from multiple sectors of a site or across sites if contextual information is available, such as well-developed ceramic chronologies. Complex models can be built with a number of different constraints placed on the radiocarbon data. The most common constraints are grouping radiocarbon dates into phases and ordering phases into a sequence. Boundaries between phases can be defined as overlapping, contiguous (the end of one phase is the start of the next), or sequential (one phase occurs before the next with a temporal hiatus in between). Considerable judgment on the part of the researcher and a familiarity with the site and contexts is imperative when applying Bayesian techniques.

Bayesian models can be built in OxCal v4.2beta (Bronk Ramsey 2009). I wanted to test the likelihood that Huaca A is older than Huaca B based on the dates I had available. To do this I set up a sequential model, which stated that all of the Huaca A dates were from one phase that preceded another phase with all of the Huaca B dates. I did not incorporate dates from the wooden feature on Huaca A because I knew that this was probably from a later construction phase and was not related to the original construction of the building. I also did not take into account the dates that were associated with the remains under the Huaca B platform, since they obviously pre-dated the construction of the Huaca B platform, and therefore, potentially also predated Huaca B itself. Unfortunately, however, I only had one date from Huaca B, so the other dates were all from the platform.

The program calculates the probability distribution of each individual date and then combines these distributions with the prior knowledge in a statistical statement

(Bayliss et al 2007; Bronk Ramsey 2009). The statements are usually multi-dimensional and their solution, therefore, requires Markov Chain Monte Carlo (MCMC) methods, in particular the Metropolis-Hastings Algorithm[18] (Gilks et al. 1996). The solution is a posterior probability density function that represents the most likely calendar ages for the specimen. In Figure 8.4 I show these posterior density estimates in the darker shade of red and gray, which I will explain below. The original radiocarbon distribution is outlined and shown in a lighter color in this figure. The model also produces estimates of dates that model the beginning and end of each phase (Bronk Ramsey 2009), which in this case is the start and end of the Huaca A phase and the start and end of the Huaca B phase. These are shown in italicized print and with blue probability distributions in Figure 8.4.

In order for a Bayesian model to have validity it must be evaluated by the archaeologist. Oxcal calculates a statistic known as the agreement index, which compares the likelihood of dates under your model to dates under a null model in which any calendar age is equally likely (Bronk Ramsey 1995). Individual agreement indices are calculated for each date and an overall agreement index is calculated for the full model or all of the dates. In both cases, if the index of agreement is below 60% then it falls in a low-probability region and indicates that there is a problem (Bayliss et al 2007). A low index of agreement can occur because a date is an outlier (due to displaced context or contamination) or because the assumptions of the model (e.g. relative chronology) are

[18] MCMC analysis is used to solve the Bayesian statements. It basically solves the statement $10^5$-$10^6$ times, with each iteration deriving a possible solution set for all the parameters in the statement. The one that comes up the most is the most likely solution. Once enough iterations are run "convergence" is reached, meaning the solution that has come up the most is the most likely solution. MCMC is a general term for many specific algorithms and the one used by OxCal v4 and above is Metropolis-Hastings algorithm (Gilks et al. 1996; Bronk Ramsey 2009).

incorrect. The statistic is useful because it can help determine if problems exist with the data or the model.

In the first model I built to test the sequence of Huaca A and Huaca B, I assumed that all the Huaca A dates were from a single phase, but the length of this phase was contingent on the radiocarbon measurements entered in the model. Unfortunately, I received a low index of agreement for two of the dates from Huaca A (Figure 8.5). The first date is a Beta Analytic (Beta-302516) date from the seed found in the burnt area described above. This indicates that this date falls outside the estimated distribution for this phase and may be problematic. I noted earlier that this was a late date and suggest that people may have continued to use this area well after the final construction phase of the huaca. However, I do have reservations about this date because a corncob from the same context (AA94811) yielded a date roughly 100 $^{14}$C years earlier. Potential explanations for these discrepancies will be elaborated upon in the following section. However, because of my reservations, I discarded the Beta date in the second model that I built and will describe below.

The other date in the first model with a low agreement index from Huaca A is an early date from the earliest surface in Huaca A (AA94806) (Figure 8.5). This sample was a piece of wood charcoal and was the only material from this level. It is possible that this is an outlier that is either an example of old wood, or indicates that if I had more dates from the lower levels of the huaca this one would better fit the model. I left this date in the second model, because I did not find it as problematic as the Beta date.

One date from Huaca B also had a low agreement index. This was also a Beta date (Beta-302520) (Figure 8.5). This date came from the fill between floor 5 and floor

5B and the $^{14}C$ date is 1280±30. The $^{14}C$ date from floor 5B is 1437±34. In Chapter 4 I note that floor 5B appears to have been used for a long time, but the 157-radiocarbon year difference between these two dates seems a bit extreme considering the architecture and ceramics found associated with floor 5B and in the fill between floor 5 and 5B were quite similar. Because of these issues I omitted the Beta date in my second model.

I colored these problematic dates discussed above in red in Figure 8.4. It is clear from this model that the posterior density estimates for these dates (the darker red distribution) are only partially within the original radiocarbon distribution, which is outlined and a lighter shade of red. In an attempt to tighten up the model I eliminated the Beta dates, as will be discussed below.

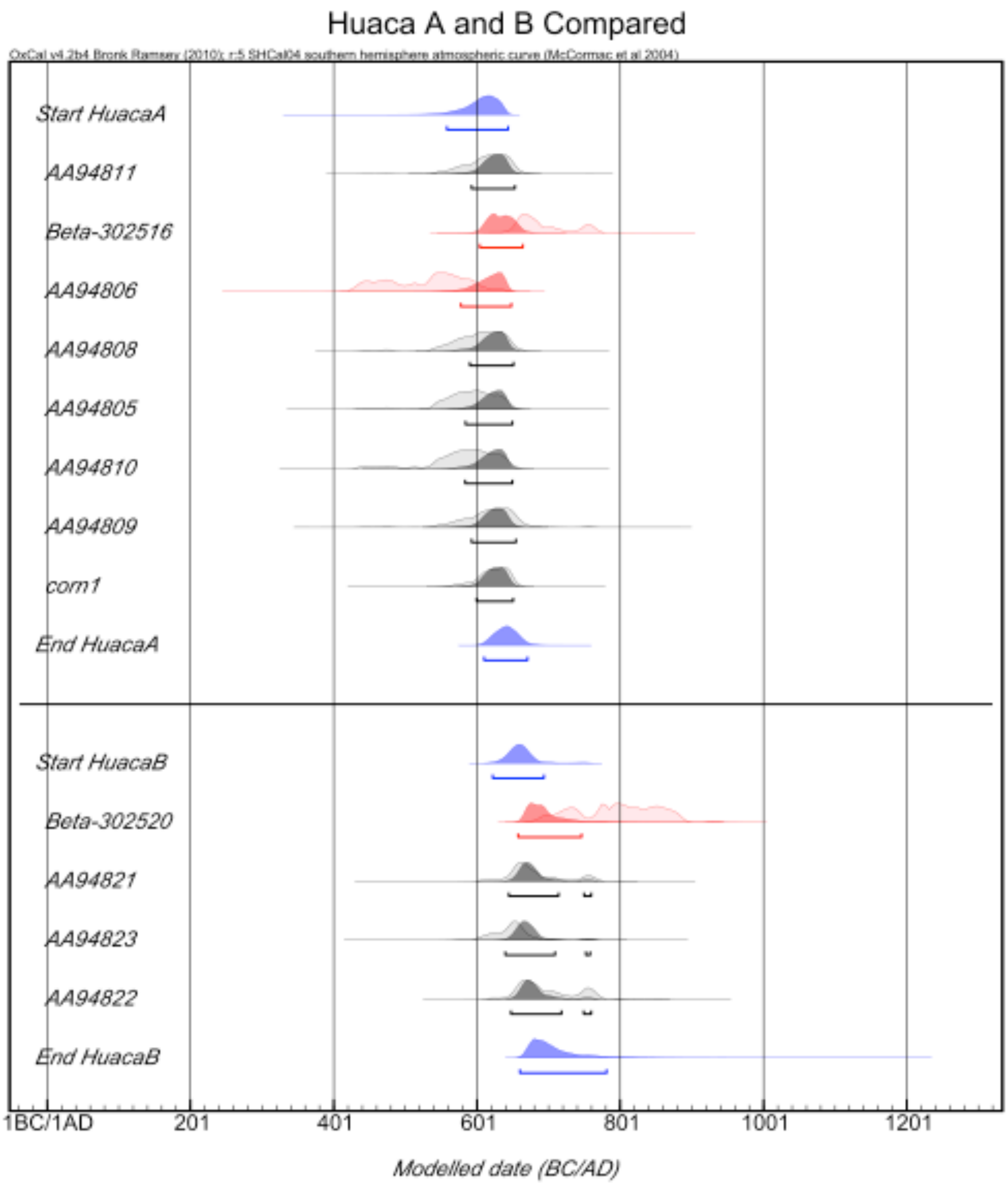


**Figure 8.4: Model 1 for comparing Huaca A and Huaca B at Licapa II with posterior estimate densities plotted. Red indicates dates with a low agreement index. Gray dates have high agreement. The blue distributions show the estimated start and end of each phase.**

| Name | Unmodelled (BC/AD) | | | Modelled (BC/AD) | | | Indices $A_{model}$=38.4 $A_{overall}$=50.3 | | | | | Select | Page break |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Show all Show structure | from | to | % | from | to | % | $A_{comb}$ | A | L | P | C | All Visible | |
| | | | | Warning! Poor agreement - A= 50.3%(A'c= 60.0%) Warning! Poor agreement - A= 38.4%(A'c= 60.0%) | | | | | | | | | |
| Curve ShCal04 | | | | | | | | | | | | 2 | |
| ▼ Sequence | | | | | | | | | | | | 3 | |
| Boundary Start HuacaA | | | | 557 | 644 | 95.4 | | | | | 98.2 | 4 | |
| ▼ Phase HuacaA | | | | | | | | | | | | 5 | |
| R_Date AA94811 | 559 | 661 | 95.4 | 593 | 654 | 95.4 | | 122.5 | | | 99.8 | 6 | |
| R_Date Beta-302516 | 645 | 771 | 95.4 | 605 | 665 | 95.4 | | 24.3 | | | 99.6 | 7 | |
| | | | | Warning! Poor agreement - A= 24.3%(A'c= 60.0%) | | | | | | | | | |
| R_Date AA94806 | 428 | 615 | 95.4 | 578 | 649 | 95.4 | | 39.1 | | | 99.7 | 8 | |
| | | | | Warning! Poor agreement - A= 39.1%(A'c= 60.0%) | | | | | | | | | |
| R_Date AA94808 | 546 | 655 | 95.4 | 591 | 652 | 95.4 | | 119.1 | | | 99.8 | 9 | |
| R_Date AA94805 | 468 | 655 | 95.4 | 585 | 650 | 95.4 | | 102.9 | | | 99.8 | 10 | |
| R_Date AA94810 | 442 | 655 | 95.4 | 584 | 650 | 95.4 | | 101.7 | | | 99.8 | 11 | |
| R_Date AA94809 | 546 | 673 | 95.4 | 593 | 655 | 95.4 | | 126.3 | | | 99.8 | 12 | |
| R_Combine corn1 | 580 | 658 | 95.4 | 600 | 652 | 95.4 | | 113.1 | | | 99.8 | 13 | |
| Boundary End HuacaA | | | | 611 | 671 | 95.4 | | | | | 99.7 | 14 | |
| Boundary Start HuacaB | | | | 623 | 694 | 95.4 | | | | | 99.8 | 15 | |
| ▼ Phase HuacaB | | | | | | | | | | | | 16 | |
| R_Date Beta-302520 | 690 | 886 | 95.4 | 657 | 749 | 95.4 | | 36.1 | | | 98.7 | 17 | |
| | | | | Warning! Poor agreement - A= 36.1%(A'c= 60.0%) | | | | | | | | | |
| R_Date AA94821 | 615 | 770 | 95.4 | 645 | 761 | 95.4 | | 118 | | | 99.8 | 18 | |
| R_Date AA94823 | 590 | 763 | 95.4 | 640 | 760 | 95.4 | | 81.7 | | | 99.8 | 19 | |
| R_Date AA94822 | 645 | 773 | 95.4 | 648 | 760 | 95.4 | | 128.3 | | | 99.7 | 20 | |
| Boundary End HuacaB | | | | 661 | 786 | 95.4 | | | | | 96 | 21 | |

**Figure 8.5: Model 1 comparing dates between Huaca A and Huaca B at Licapa II. The dates that have a low agreement index are shown with warnings.**

As mentioned, I omitted the problematic Beta dates for my second model seen here in Figure 8.6 and Figure 8.7. This model shows that the dates I deemed credible for Huaca A and Huaca B are in two separate sequences that overlap. This indicates that Huaca A was likely built before Huaca B, but both huacas were contemporaneously used for some time. The model has the start for Huaca A between 561 and 641 AD and the end of use of Huaca A between 600 and 655 AD. The modeled start of Huaca B is between 623 and 675 AD and the end between 645 and 715 (see Figure 8.6 and blue distributions in Figure 8.7). It is likely that Huaca B was in use for much longer than this model suggests because (1) I omitted the latest date for fear that it was too late, (2) no samples were collected from the upper contexts of the huaca, and (3) only three dates are considered here. Radiocarbon evidence from the northwest corner of Huaca A (the wooden feature) that were not used in this model also demonstrates that Huaca A did not go completely out of use and portions were remodeled during the second phase of site use. Nonetheless, I have confidence that the dates presented here demonstrate that Huaca A was likely built prior to A.D. 600 and Huaca B was constructed after 600 AD. This is significant because it demonstrates that the changes at Licapa II were in sync with the changes that were happening throughout the rest of the Moche world and can be looked to as an example of the changing Moche political and religious dynamics around the 7$^{th}$ century AD. This will be elaborated upon in the final section of this chapter.

| Name<br>Show all<br>Show structure | Unmodelled (BC/AD) | | | Modelled (BC/AD) | | | Indices<br>$A_{model}$=125.8<br>$A_{overall}$=131.2 | | | | | Select<br>All<br>Visible | Page break |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | from | to | % | from | to | % | $A_{comb}$ | A | L | P | C | | |
| ShCal04 | | | | | | | | | | | | 2 | |
| | | | | | | | | | | | | | |
| Start HuacaA | | | | 561 | 641 | 95.4 | | | | | 97.9 | 4 | |
| HuacaA | | | | | | | | | | | | | |
| AA94811 | 559 | 661 | 95.4 | 586 | 646 | 95.4 | | 118.3 | | | 99.6 | 6 | |
| AA94806 | 428 | 615 | 95.4 | 575 | 645 | 95.4 | | 46.6 | | | 99.4 | 7 | |
| | | | | Warning! Poor agreement - A= 46.6%(A'c= 60.0%) | | | | | | | | | |
| AA94808 | 546 | 655 | 95.4 | 584 | 645 | 95.4 | | 121 | | | 99.6 | 8 | |
| AA94805 | 468 | 655 | 95.4 | 580 | 645 | 95.4 | | 110.7 | | | 99.6 | 9 | |
| AA94810 | 442 | 655 | 95.4 | 580 | 645 | 95.4 | | 109.9 | | | 99.6 | 10 | |
| AA94809 | 546 | 673 | 95.4 | 586 | 647 | 95.4 | | 119.8 | | | 99.4 | 11 | |
| corn1 | 580 | 658 | 95.4 | 591 | 647 | 95.4 | | 103.4 | | | 99.5 | 12 | |
| End HuacaA | | | | 600 | 655 | 95.4 | | | | | 99.7 | 13 | |
| Start HuacaB | | | | 623 | 675 | 95.4 | | | | | 99.7 | 14 | |
| HuacaB | | | | | | | | | | | | | |
| AA94821 | 615 | 770 | 95.4 | 641 | 686 | 95.4 | | 144.4 | | | 99.8 | 16 | |
| AA94823 | 590 | 763 | 95.4 | 640 | 681 | 95.4 | | 128.1 | | | 99.7 | 17 | |
| AA94822 | 645 | 773 | 95.4 | 642 | 689 | 95.4 | | 127.1 | | | 99.6 | 18 | |
| End HuacaB | | | | 645 | 715 | 95.4 | | | | | 97.2 | 19 | |

**Figure 8.6: Model 2 comparing Huaca A and Huaca B. This model only contains one date with a low agreement index, which I determined to not necessarily be problematic for the model. The estimated start and end of both the Huaca A and Huaca B phase is shown in the table here.**

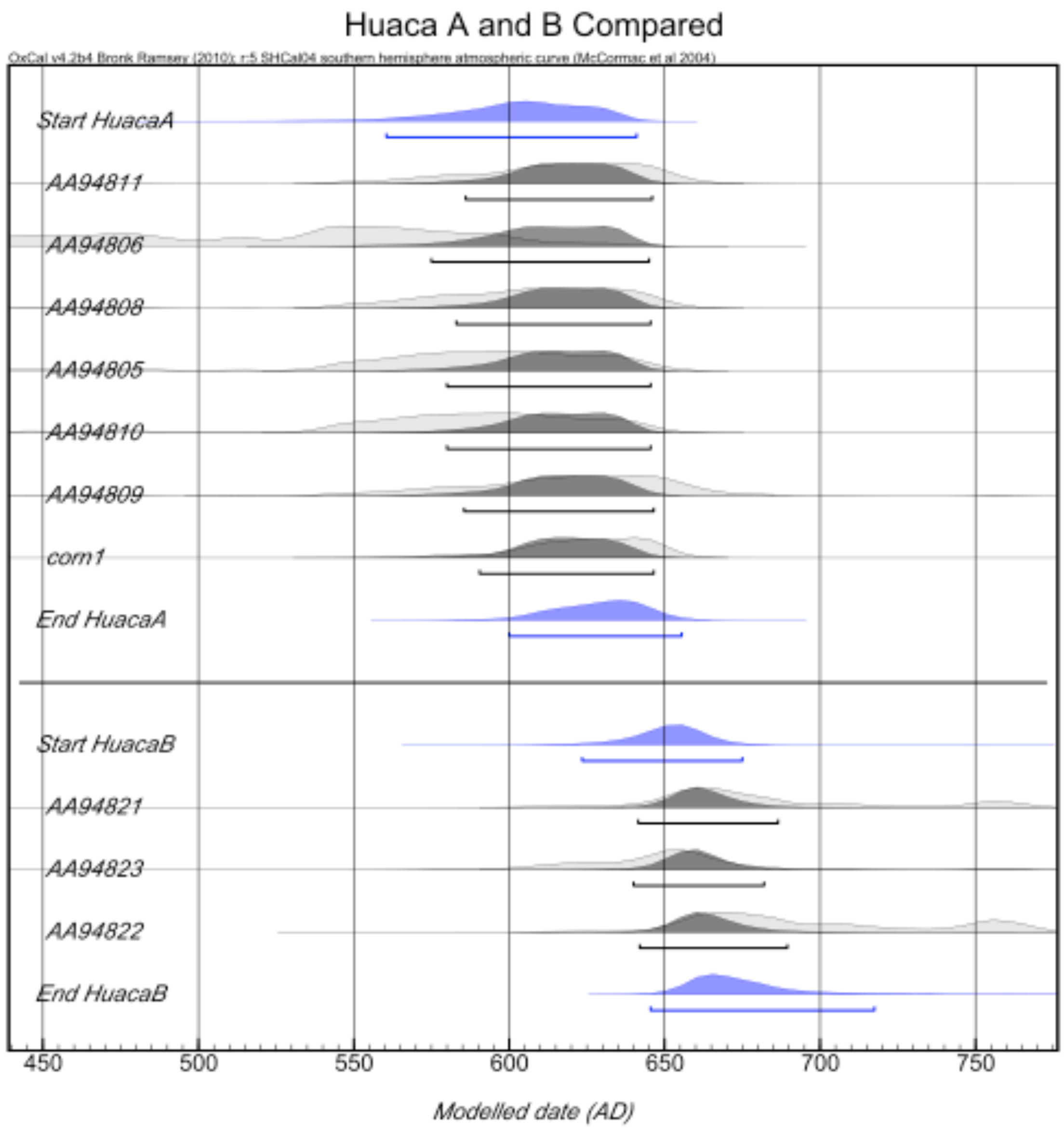


**Figure 8.7: Model 2 comparing Huaca A and Huaca B. The estimated start of the Huaca A phase is before the estimated start of the Huaca B phase, shown here in blue. Note the scale is different on this model to show the overlap in the phases more clearly.**

Overall, the radiocarbon data confirm the chronological progression of site development and, inferentially, its use. Bayesian methods help confirm that Huaca A was the first building on the site. However, it should not be forgotten that there was some activity in the Huaca B sector prior to the construction of the platform as evidenced by the vegetal remains and monkey bones in this location. There was also potentially an early, smaller phase of Huaca B itself that was not uncovered in the excavation. Nevertheless, data here indicate that sometime after the construction and use of the second building of Huaca A, Huaca B and the platform were built to their final form and used for their final purposes, which is inline with architectural changes seen elsewhere in the Moche world as discussed in Chapter 7. People did not start using the area between the Huacas until well after Huaca A had been a fixture on the site and around the time Huaca B was going through remodeling. Artifacts found in association with these different sectors of the site further demonstrate the different phases of use and different activities performed during these phases as has been discussed in Chapter 4, 5 and 6.

In my discussion above I have hinted at some of the problems I encountered between the two sets of dates from the two different labs. In the following section I discuss some of the potential reasons behind these problems. I caution that radiocarbon dates should not be taken at face value. Careful evaluation of the dates and their contexts is imperative for constructing reliable and accurate chronologies.

## Radiocarbon Problems

Because I sent portions of the same sample to two different labs, I was able to observe a disturbing pattern. Unfortunately, as I have mentioned, the dates obtained from Beta Analytic, Inc. and the NSF laboratory in Tucson, Arizona are quite different in some cases, which, as I have shown can be problematic when comparing dates. These differences can have major implications when attempting to compare data from different sites sent to different labs. Three of the samples from Licapa II (Set A, B, and C of Table 8.2), which included two charred corn cobs and a sample of the wood from the wooden feature in Unit 1, were divided and sent to both of the labs. Two other samples (D and E) sent to both labs were from different materials, but the same contexts (Table 8.3).

Table 8.2 shows that for Set A and Set B, the $^{14}C$ dates acquired from Beta Analytic are 98 and 63 years, respectively, younger than the dates obtained from the NSF lab. The Set B dates in Table 8.2 are roughly the same. Dates from the same sample can be combined in Oxcal v4.2beta. This program runs a chi-square[19] test to check for internal consistency of the dates to be combined (see Shennan 1988:65 for method). If the dates are not statistically the same, a warning is given and the combined date should not be used. Attempting to combine the dates for the same sample shows that Set B and C are statistically the same, but Set A is statistically different (Figure 8.8) indicating that there are some serious problems that need to be considered.

**Table 8.2: Same samples from Licapa II sent to two different laboratories, Beta Analytic, Inc. and the Tucson, Arizona NSF laboratory.**

| Set | Lab | LabID | SampleID | Material | $\delta^{13}C$ | Fraction Modern | $^{14}C$ | ShCal04 (CalAD) |
|---|---|---|---|---|---|---|---|---|
| A | NSF | AA94819 | L2-U4-N7-O2-1* | Corncob | -11 | 0.8223±0.0036 | 1572±35 | 430-620 |
| | Beta | Beta-302519 | L2-U4-N7-O2-1 | Corncob | -10 | 0.8328±0.0031 | 1470±30 | 580-670 |
| | | | | | | | | |
| B | NSF | AA94807 | L2-U2-SN10-T1-O1* | Corncob | -10.5 | 0.8285±0.0037 | 1512±35 | 540-650 |
| | Beta | Beta-302517 | L2-U2-SN10-T1-O1 | Corncob | -11.8 | 0.8338±0.0031 | 1460±30 | 580-670 |
| | | | | | | | | |
| C | NSF | AA94804 | L2-U1-N4B-O1* | Wood | -27 | 0.8346±0.0037 | 1453±36 | 580-680 |
| | Beta | Beta-302515 | L2-U1-N4B-O1 | Wood | -25.6 | 0.8411±0.0031 | 1390±30 | 650-770 |

[19]The chi-square test used tests the contemporaneity between two or more dates and was developed by Ward and Wilson (1978). This method produces a test statistic with a chi-square distribution based on $^{14}C$ ages weighted by their errors. It is used to identify outliers.

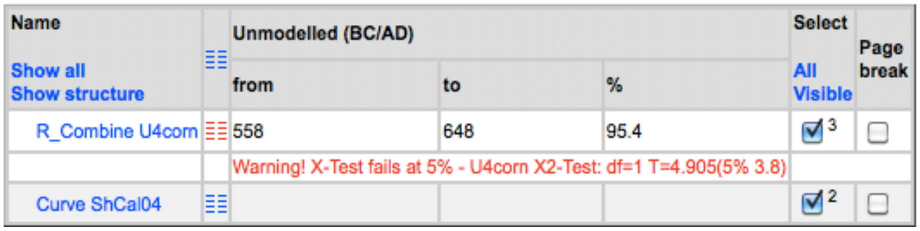


**Figure 8.8: Graphic from Oxcal v4.2beta showing that the chi-square test failed when the dates from the corn sample from Unit 4 were combined.**

The dates in Table 8.3 come from different materials from the same context. Since these dates were not from the exact same sample, I did not find it appropriate to try to combine them. However, noting the 14C values for both Set D and E, again the Beta dates are much younger than the NSF dates. These problems were identified when I entered both dates from Set E into my Bayesian model and the Beta dates were rejected because of their low agreement index. When examining the dates in general, the Beta Analytic Dates are younger than the NSF dates. A variety of factors could account for the discrepancies as will be described below.

**Table 8.3: Different samples from the same context sent to the two laboratories.**

| Set | Lab | LabID | SampleID | Material | $\delta^{13}C$ | Fraction Modern | $^{14}C$ | ShCal04 (CalAD) |
|---|---|---|---|---|---|---|---|---|
| D | NSF | AA94813 | L2-U3-N6-O1 | Wood | -26 | 0.8264±0.0037 | 1531±36 | 440-650 |
| | Beta | Beta-302518 | L2-U3-N6-03 | Seed | -24.9 | 0.8432±0.0031 | 1370±30 | 650-770 |
| | | | | | | | | |
| E | NSF | AA94811 | L2-U2-N3-O1 | Corncob | -11.2 | 0.8308±0.0037 | 1489±36 | 560-660 |
| | Beta | Beta-302516 | L2-U2-N3-02 | Seed | -22.8 | 0.8411±0.0031 | 1390±30 | 650-770 |

First, there could be cultural or environmental reasons for the difference in the dates. For example, Set C samples were taken from a piece of wood that was part of the wooden feature on Huaca A. This piece of wood came from an *algarrobo* tree and was quite large. During transit to the US the wood crumbled, therefore, the pieces sent to the two labs could have been from parts of the tree that grew over 100 years apart, and therefore, an example of "old wood." Some of the "wood charcoal" could also have come from larger trees, but this is unknown since the fragments were small when they were recovered. Testing would have been required to identify the species prior to dating, which was not in my budget.

As mentioned previously, the "old wood" problem could have also been a factor in the discrepancy between the dates in Set D. These samples both came from the inside of a vessel sitting on sterile sand in Unit 3; one was of wood charcoal and the other seed charcoal. The differences in the dates in Set E can also potentially be explained with cultural factors. As discussed, these two samples came from a shallow burned area below the east terrace wall of Huaca A. This area could have been repeatedly used for rituals and ceremonies and that is why two samples from the same context yielded such different dates.

Other factors could have contributed to the differences in these dates, since I cannot explain the discrepancies in Set A with cultural or environmental factors. Both these samples came from a single small piece of maize and still yielded $^{14}C$ dates with a 98-year difference.

The second factor that may have produced varying dates is the different laboratory equipment, pretreatment procedures and overall protocol. It should be noted that AMS dating and conventional radiocarbon dating yield the same results but are completely different methods. Conventional dating is what Libby first developed. This technique detects the beta particle from the decay of a $^{14}C$ atom to $^{14}N$. A beta particle is an electron emitted from the radioactive decay of a nucleus. For conventional dating the sample size needed ranges from 10-20 grams for a piece of charcoal. AMS dating measures the number of $^{14}C$ atoms, or the proportion of $^{14}C$ to $^{12}C$. The advantage of AMS dating is that the sample size requirement is much smaller (10-100 mg of charcoal) and it takes less time.

Both Beta Analytic, Inc and the NSF laboratory in Arizona are equipped for AMS dating, which was used for this project. However, the two labs use different types of AMS equipment, which can give different results. Nonetheless, they do have similar protocols, which should limit variability. Both labs use ABA (acid-base-acid) pretreatment for wood and charcoal samples (Beta Analytic, Inc 2011; Gregory Hodgins, NSF laboratory, personal communication). The basic procedure is that samples are washed with hot hydrochloric acid (HCl) to eliminate carbonates. This is followed by cleansing the sample with an alkali, such as sodium hydroxide (NaOH), to remove remaining organic acids. The NaOH is followed by a final acid (HCl) rinse to neutralize the alkali before the sample is dried (Brock et al. 2010; Goh and Molloy 1972). However, although the protocols are the same, slightly different preparation and execution procedures and different AMS equipment can lead to different results. For example, when reviewing the dates from Licapa II, the $\delta^{13}C$ and the Fraction Modern values are different for the same sample, which should not be the case (Table 8.2 and Table 8.3). This can only be explained by difference between the labs since these values should be the same for identical samples, as will be explained in more detail below.

Recent work, mainly at the Oxford Radiocarbon Accelerator Unit (ORAU), has shown that most dates are systematically biased younger than their true age due to contamination by modern carbon (Higham 2011; Jacobi and Higham 2008). Therefore, if any of these samples were contaminated, it would likely be the ones that produced the younger dates of the set of two samples. In the case of the dates from Licapa II, these would be the samples I sent to Beta.

A third factor is the oscillations on the calibration curve, which effect calibrating $^{14}C$ dates into calendar years. The Southern Hemisphere calibration curve is relatively flat between cal A.D. 400 and 540, thus any date that falls within this range, even at the upper limits, will be reported as encompassing the entire age range (Figure 8.9). There is also a somewhat flat section of the curve between cal A.D. 800 and 870, and a slight reversal in the curve between cal A.D. 750 and 780 (Figure 8.10). In Figure 8.9 and Figure 8.10 radiocarbon years is shown on the Y-axis. The radiocarbon year given by the lab is shown at the apex of the Gaussian curve located on the Y-axis. A 95.4% highest probability density is shown under the bell. The center of the graph shows the Southern Hemisphere calibration curve. Where the range of radiocarbon years from the Y-axis crosses this curve determines the calibrated years shown on the X-axis. The flat space, or plateau, between A.D. 400 and 540 could have some affect on Set A, shown in Table 8.2.

The cal AD dates for these two samples in Set A overlap to some extent, yet the NSF date has a much greater possible cal AD range because it fall under the flat part of the curve. However, this still does not explain the difference of 98-year radiocarbon years ($^{14}C$), which can only be explained by different lab procedures.

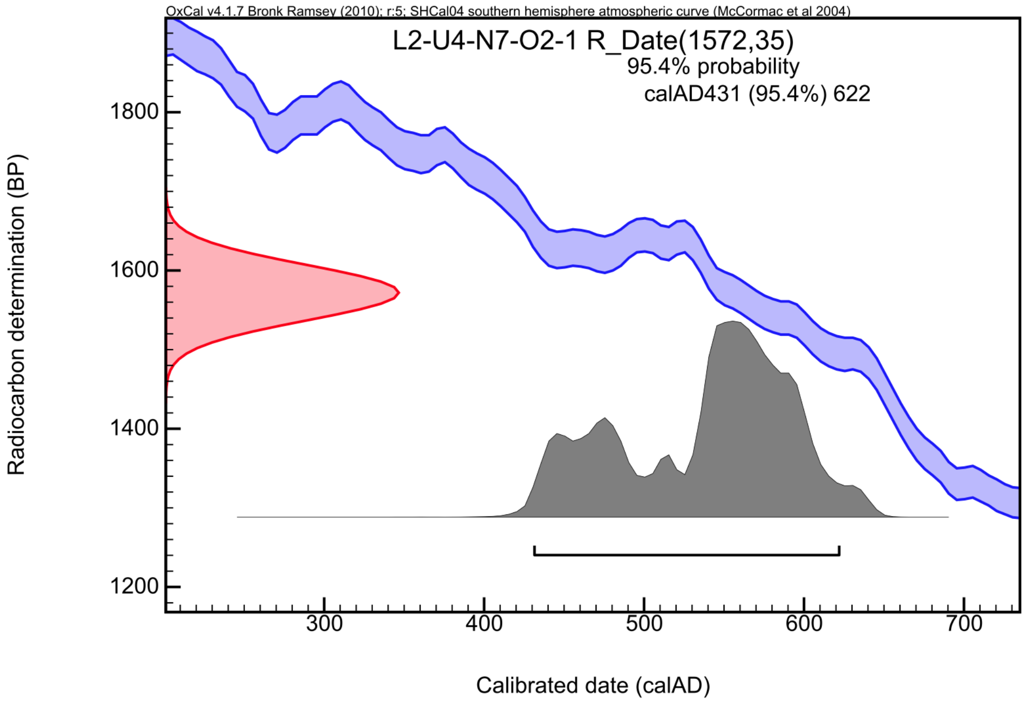


**Figure 8.9: Radiocarbon date that falls on the plateau between 400 and 540 AD.**

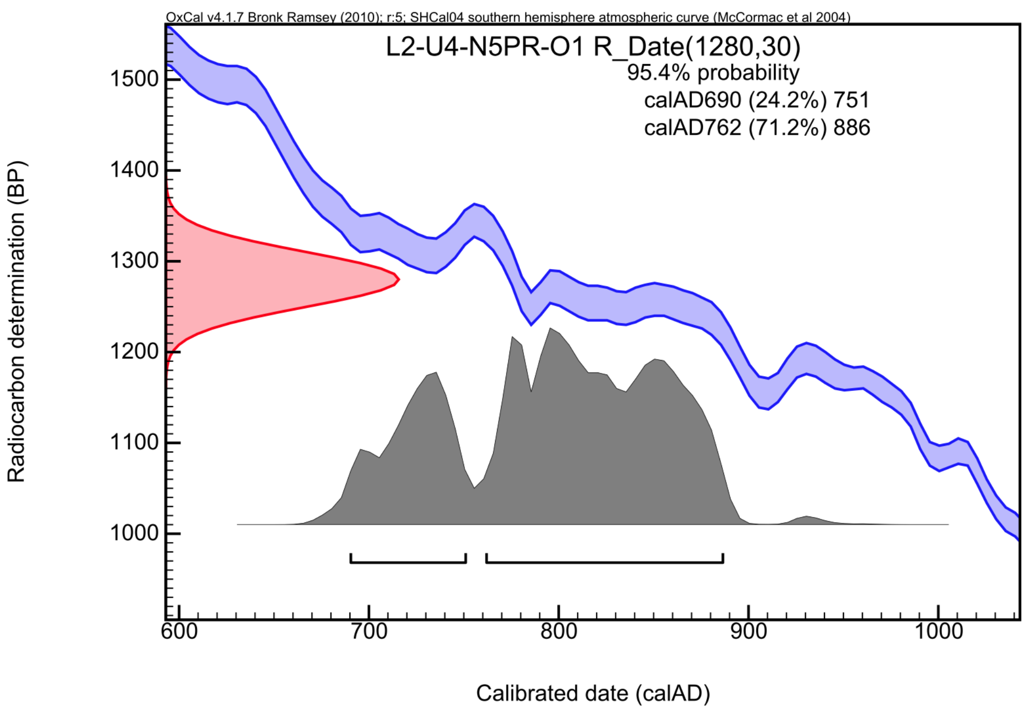


**Figure 8.10: Radiocarbon date from Licapa II that falls on a reversal in the curve between 750 and 780 AD and on a plateau in the curve between 800 and 890 AD.**

A fourth and final factor that may have influenced the production of different dates between the two labs is the nature of the material dated. The carbon isotopes $^{12}C$, $^{13}C$, and $^{14}C$ are all taken up by growing organisms, with $^{12}C$ being the lightest and taken up more readily and $^{14}C$ being the heaviest and taken up much less. Different organism uptake the carbon isotopes at different ratios as a result of natural biochemical processes. The differential uptake is referred to as fractionation (Bowden 1990). To test for fractionation one measures the $^{13}C$ to $^{12}C$ ratio of a sample, which will be directly related to fractionation affecting the $^{14}C/^{12}C$ ratio. The idea is to correct the $^{14}C/^{12}C$ ratio for fractionation measured by the $^{13}C/^{12}C$ ratio, so the $^{14}C/^{12}C$ ratio only reflects differences due to radioactive decay. This fractionation ratio is expressed as $\delta^{13}C$. Traditionally, for radiocarbon dating the $\delta^{13}C$ is corrected for the value of wood, which is -25‰ (permil). If the corrected age is larger than -25‰, then the corrected age is older than the measured age, which in terms of radiocarbon years means that for every 1‰ difference from -25‰ there is an age correction of about 16 years (see Bowden 1990:21).

Recently, however, some laboratories, including Beta Analytic, Inc. (personal communication, 2012) measure the $\delta^{13}C$ value for each specimen and use this to correct for fractionation. Therefore, each sample is properly corrected even if the material dated is not properly identified, as is discussed below. Today, fractionation correction will not pose much of a problem if this method is used. However, specimens dated in the past might not have been properly corrected for fractionation if they were misidentified. Table 8.4 shows the different $\delta^{13}C$ values for commonly dated archaeological materials. Knowledge of these values is significant because the ranges on these data are typically ± 2 or 3‰ but a great deal more variety is possible. With 16 years per 1 ‰ age difference from -25‰, this data demonstrate the need for fractionation correction to measured radiocarbon results (Bowden 1990:23). It also illustrates how different fractionation values given by different laboratories can affect the corrected age of a $^{14}C$ sample.

**Table 8.4: $\delta^{13}C$ values for different commonly dated archaeological materials.**

| Material | $\delta^{13}C$ Value |
|---|---|
| Wood, C3 plants | -25‰ |
| Bone Collagen | -19‰ |
| Freshwater Plants | -16‰ |
| Arid Zone Grasses | -13‰ |
| Marine Plants | -12‰ |
| Maize and other C4 plants | -10‰ |
| Marine Carbonates (Shells) | 0‰ |

The nature of the material is not necessarily a major factor affecting the dates at Licapa II, but it becomes significant when comparing older dates between sites. On the north coast of Peru, especially at sites such as the Huacas de Moche, a good deal of the material that was date in the past was cane or reed. In some cases the species was identified and noted; however, often the species of reed was not given and/or was unknown. Many varieties of river cane/ reed exist and once they are carbonized they are difficult to distinguish between, especially to the untrained eye. Some of these species are $C_3$ plants, and others are $C_4$. Since the corrections are not the same for $C_3$ and $C_4$ plants, problems can arise when the species is unknown and the proper $\delta^{13}C$ correction is not made. If a $C_4$ plant is treated like a $C_3$ plant it will appear to be 240 years older than it really is (Bowman 1990:21).

The only way to really tell if a lab made a correction is by looking at the $\delta^{13}C$ value provided by the radiocarbon laboratory. Unfortunately, most scholars do not publish this information. Furthermore, often archaeologists date “charcoal” and do not note if it was from cane or wood or other organic remains. Without fully understanding the nature of the sample, the dates produced can be off by years.

Beta Analytic, Inc has been correcting for $\delta^{13}C$ on all AMS dates since 1984. For all conventional radiometric analysis they have been doing the correction since 2004. Before that the corrections were only done on request, but since 1995 they would apply the typical $\delta^{13}C$ value if the archaeologist knew the nature of the sample (if it was a $C_4$ plant, shell, etc.) (Billman and Surridge 2011; Beta Analytic, Inc, courtesy of Evan Surridge). So whether or not a Beta Analytic sample was corrected for fractionation depends on, when it was run (what year), the technique used (AMS vs. conventional radiometric analysis), and what the archaeologist knew about the sample and requested from the lab (Evan Surridge, personal communication). The information for other radiocarbon labs is not readily available and their policies differ; however, Oxford Radiocarbon Accelerator Unit (ORAU) samples can be checked on their website.

Thus it is very difficult to know what information is contained in a radiocarbon date. A radiocarbon date is not a date, but a measure of carbon isotope ratios transformed to a calendar date by a series of assumptions and choices. Most scholars only publish the $^{14}C$ value and the uncertainty. It is rarely known if the date was obtained by AMS or conventional radiometric analysis, or even the exact nature of the material. All of this can create major problems when evaluating dates across sites and obtained from various labs. The larger issue then becomes whether or not the differences between the labs can be tolerated and whether or not we can compare dates from different laboratories, and therefore, different sites. The issues highlighted above suggest that we cannot necessarily take radiocarbon dates at face value. A large number of dates are needed from each site and the materials, contexts, and lab differences must be evaluated very carefully and taken into consideration. As mentioned above, the best way to compare radiocarbon dates is with Bayesian methods. In my comparison below I do not use these methods, but I plan to do so for future cross-site analyses.

**A Comparison of Radiocarbon Dates for Major Moche Sites**

Despite the various problems in comparing radiocarbon dates from different laboratories, an examination of the available dates from major Moche sites provides significant insights into culture history and processes on the North Coast of Peru. Although I am not completely sure, as far as I can tell, all of the dates presented below and in Appendix C were corrected for $\delta^{13}C$ fractionation. However, some of the dates were obtained from samples simply labeled “charcoal” or “reed.” It is, therefore, possible that there are problems with some of the dates. Also, a total of at least ten different laboratories were used to produce these dates. However, when the dates are correlated with their context and the material culture, the problems become apparent. Overall, I assume that the majority of the dates is credible and can be used to construct a more detailed and nuanced chronology for Moche.

As was noted in Chapter 1, the biggest problem in our understanding of Moche is that there is no agreed upon criteria for what makes a site Moche. I adopt a definition that Moche was primarily a religious phenomenon that was expressed through a shared set of symbols and messages presented on portable media and other art. Sites that engaged with these messages and symbols were likely participating in some way in the Moche ideology. Therefore, a site from the same time period that did not use these symbols cannot be considered Moche (see Bourget 2010 on Huancaco). However, the sites I consider below have generally been considered Moche for the last half-century or more. Nonetheless, Moche is expressed differently in different places and at different times. This was discussed in Chapter 3 and will be explored further in Chapter 10, but it is necessary to further unpack the different expressions of Moche through time and space here with an evaluation of radiocarbon dates before we can begin to understand how and if sites were affiliated.

Included in Appendix C is a compilation of dates from eighteen sites with Moche and Moche-like contexts. In the table in Appendix C I include the archaeological context provided by the authors who originally published the dates. I took the $^{14}C$ and uncertainty values given by the authors and calibrated them with the Southern Hemisphere calibration curve using Oxcal 4.1 (ShCal04) (McCormac et al. 2004).

Figure 8.11 shows the cal AD date ranges and the material context of these dates for eight of the sites. On the left side of the figure are sites in the Chicama Valley (El Brujo, Cerro Mayal, and Licapa II). The right side of the figure has Northern Moche dates (Pampa Grande, Dos Cabezas, and San José de Moro), and Southern Moche dates (Huacas de Moche and Galindo) (see Figure 1.1 for site locations). I could have included all the sites, but I chose these because the new radiocarbon data from Licapa II can help clarify the timing of certain patterns we see at these other sites. In the discussion below, however, I do refer to other sites that are in the table in Appendix C.

I have coded Figure 8.11, so the material contexts associated with the dates are easily identifiable. For example, here Galindo and Pampa Grande dates are shown in red, which corresponds to Moche V contexts. Moche IV contexts, such as those from Cerro Mayal and Huacas de Moche are turquoise. Since Moche IV and V ceramics are found together at Licapa II, I colored these dates purple. By viewing the dates and their contexts many intricacies of Moche dynamics can be derived. It should be noted that the long time ranges for each date makes it difficult to construct precise chronologies, but approximations can be made.

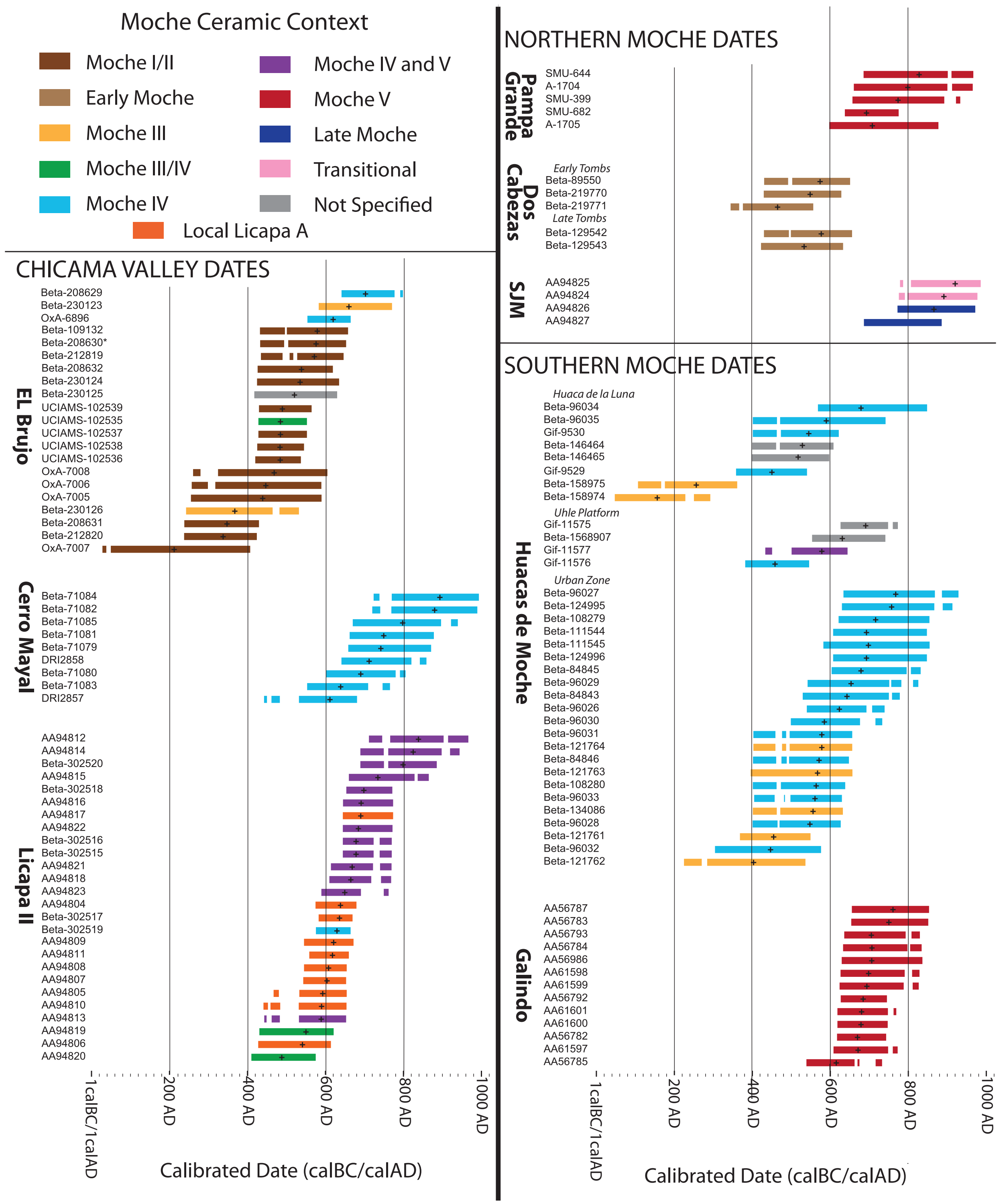


**Figure 8.11: Radiocarbon dates for eight Moche site shown here color coded for their contextual information.**

The Span of Moche

First, it has long been suggested that the Moche archaeological culture dated from 1-800 AD. However, reviewing the dates in Figure 8.11 and Appendix C indicates that there is very sparse evidence for this claim and the dates should be revised to A.D. 300-900. Only three dates have a weighted median age of less than 300 AD. Two of these dates come from Plaza 3C at the Huaca de la Luna, and the third is from Phase D, Huaca 2 of the Huaca Cao Viejo. I am not taking the ~290 AD date provided for Sipan (see Appendix C) (Alva 1988:524; Shimada 1994) into consideration because no $^{14}C$ date was published, the calibration curve was not cited, and the sample came from a large roof beam, which could have been an example of "old wood."

At the Huaca de la Luna the early dates were obtained from fly pupae and a piece of reed rope tied around a sacrificed prisoner. Although on the early side, considering that the Huacas de Moche became the largest and most influential site these dates are not unreasonable. However, it should be noted that reed of unknown origin may by suspect, and there is not a great deal of literature on the accuracy of dating flies, which were presumably feeding on the flesh of humans, whose $^{14}C$ ratio could have been affected by the marine reservoir effect[20]. Nonetheless, these dates were corrected for fractionation (Verano 2008).

[20] Radiocarbon samples that obtained their carbon from a different source (known as a reservoir) than atmospheric carbon may produce what is called "apparent ages." The average difference between a radiocarbon date of a terrestrial sample, such as a seed, and a shell from the ocean is about 400 radiocarbon years (Stuiver and Braziunas 1993). A reservoir correction must be made to any dates obtained from shells or marine remains to account for this difference. Because of this effect, human bone may be problematic to date if the human's diet was rich in marine foods, which was likely the case in coastal Peru. Therefore, flies eating human remains may also be subjected to this effect. It is very difficult to know the precise reservoir difference, which is dependent on the amount of marine resources consumed, and therefore, it is very difficult to apply a correction to the measured radiocarbon age.

At the Huaca Cao Viejo the sample with the early date was from a piece of *Caña de Guayaquil* (29-408 AD) (OxA-7007). This is a very long range that is not very helpful when trying to refine the chronology. Cane from the same phase and from two phases prior (Phase F, Huaca 2) (OxA-7005 and OxA-7006) both date to A.D. 260-590, suggesting that the early date for OxA-7007 may not reflect the actual date of construction. In the arid environment of the coast of Peru, organic materials take a very long time to decompose, and therefore could have been reused from earlier time periods. Other dates from El Brujo, Dos Cabezas and the Huacas de Moche all suggest that Moche did not start until the mid 4$^{th}$ century, if not the first half of the 5$^{th}$ century.

Dates on the latter end of the spectrum demonstrate that Moche continued until at least A.D. 850-900. Dates from Licapa II support this argument. Four of the dates from Licapa II have weighted median dates over A.D. 800 and the latest date ranges from cal AD 712-945 (see L2-U3-N4-R4-O4 in Appendix C for probability margins). As mentioned, I did not date materials from the upper most contexts due to the fear of contamination, which suggests that Licapa II was inhabited after the latest date obtained from the site and likely until around A.D. 900. The late dates from Pampa Grande range from A.D. 688 to 970. The dates from Pampa Grande come from the final occupation and from materials from the burning that occurred supposedly when the site was abandoned (Shimada 1994). San José de Moro has the latest dates, as is expected with the material correlates found there. Late Moche dates from the site range from A.D. 685-975. Transitional Period dates demonstrate that this period likely began around A.D. 900. The dates from Galindo are fairly tight and suggest that the Moche V occupation was relatively short-lived ending probably around A.D. 800.

Late dates were also obtained from Cerro Mayal. However, dates from this site suffer the same problem as dates from Licapa II. As noted in Appendix C Beta-71085 is from the same sample as DRI2858, Beta-71081 is from the same sample as DRI2857. The material for both sets of samples was “charred wood” (Russell et al. 1998). Comparing the $^{14}C$ dates between the exact same samples sent to different labs, again demonstrates that the Beta dates are 100 years younger. Again, this could be an example of “old wood,” but in this situation there is no way to know which ones are correct and which ones are incorrect. The 100-year difference does not significantly effect the interpretation of these dates. They all still fall post 600 AD and if anything, may suggest that the site was occupied slightly longer than it really was. Either way, these discrepancies do not challenge my overall interpretations of Moche chronology.

Despite the potential problems with the Cerro Mayal dates, on the whole when compared, they suggest that Moche began later that the usual quote of A.D. 1-100, not really getting a start until after A.D. 350. It also lasted later in some places and up until A.D. 900. In other places, such as Galindo and the Huacas de Moche, Moche presence waned earlier. Overall, however, based on this evidence, it seems reasonable to place the end of Moche closer to A.D. 900 rather than A.D. 800.

Moche Ceramic Chronology and Reorganization

The second piece of information that can be gleaned from comparing the radiocarbon dates coupled with their contextual information is a better refined chronology. This chronological progression of the development of Moche sites can also be associated with ceramic styles found at each site. Data from Licapa II helps to interpret the chronology. Prior to 600 AD, Licapa II was characterized by a local style of ceramics as well as what can be considered Moche III/IV ceramics, both on Huaca A and a possible example below the Huaca B platform. By evaluating Figure 8.11 we can see that this local style was used at the same time as Moche III and IV ceramics at Huacas de Moche. The local Licapa II style was also in use when the Moche III/IV and IV ceramics were at El Brujo. Local Licapa II may also overlap with the use of Moche I/II at El Brujo. Local Licapa II also potentially overlaps with the latter years of the use of Early Moche ceramics at Dos Cabezas. These data suggest that the ceramics are regional stylistic variations and not necessarily strict temporal indicators.

Around 600 AD some major shift occurred. This timing corresponds to the purported closing of the Huaca de la Luna, where Moche IV ceramics were only adopted for the final phase of its use (Uceda 2010). It is also around 600 AD when Moche IV ceramics are introduced at El Brujo and the final huaca is constructed to mirror the Huaca de la Luna (Mujica 2007). Data from Licapa II indicate that Moche IV ceramics were introduced around A.D. 600 and the site was expanded. Elsewhere, sites such as Dos Cabezas were abandoned and other sites, such as Guadalupito, Santa Rita B, and Cerro Mayal were first occupied. Moche IV and IV-like contexts characterize these post 600 AD sites. I say Moche IV-like because the Moche IV style in the Santa Valley is actually not the same as the Moche IV style in the Chicama and Moche Valleys, which was reviewed in Chapter 6 and is characterized by highly polished wares, many containing elaborate fineline painting.

The Moche IV ceramic style in the Santa Valley shows variations from the Moche IV style in the Moche Valley. These variations include the almost total lack of reduced wares, a lack of fineline ceramics, and ceramics with a much cruder surface finish with no polishing (Donnan 1973:103; Chapdelaine 2008; Wilson 1988). In general, they appear to be a locally produced phenomenon that drew heavily on Moche IV from the Moche Valley, yet were unique to Santa sites.

After Moche IV is introduced on the coast of Peru a whole host of other changes began to occur. At Licapa II, Moche V is adopted by A.D. 650, very soon after the appearance of Moche IV. Sites such as Galindo and Pampa Grande, both containing Moche V ceramics also are first occupied post A.D. 650. Other sites, such as Cerro Mayal, and Huacas de Moche continue to be occupied but also continue to use and produce Moche IV ceramics. Late Moche ceramics are adopted at San José de Moro also post 650 AD.

It seems as though the initial spread of Moche IV reconfigured North Coast ideology around A.D. 600 and many groups and settlements adopted aspects of the Moche IV ideology. However, the Moche IV phenomenon was quickly reinterpreted in the varying locales and from it emerged the Moche V and Late Moche styles beginning around 650 AD. The spread and reinterpretation of Moche IV ideology will be explored further in Chapters 9.

Moche IV, V and Late Moche

Finally, and relating to my last point, when viewing Figure 8.11 it also becomes pretty clear that the temporal distinction between Moche IV and V also does not clearly exist. This has been noted by scholars since the publication of the late dates from Huacas de Moche (Chapdelaine 2001; Uceda et al. 2001; Uceda et al. 2007) and has recently been elaborated upon by Lockard (2009). However, prior to my work at Licapa II, we did not have definitive evidence that these two styles were used contemporaneously at a single site. Evidence from Licapa II suggests that the Moche IV style may have arrived just prior to the invention or adoption of Moche V. However, Moche V was being used at the site by 650 AD. Although we have no dates from other Moche V sites in the Chicama Valley, there are numerous examples of Moche V pottery in the Larco Museum that all come from this region and are strikingly similar to the ceramics found at Licapa II. Sites with Moche V materials in the Larco collection include Paiján, Facalá, Santa Ana, Mocán, and Tchuín and will be explored further in the following chapter.

The Moche V style outside of the Chicama Valley is only found at a handful of sites and isolated surface finds. In the southern Jequetepeque, sites such as Pacatnamú (Ubbelohde-Doering 1983) and Huaca Colorada (Swenson and Warner 2012) have both Geometric and Figurative Moche V fragments. The phase corresponding to the use of Moche V at Pacatnamú was not dated and the $^{14}C$ dates for Huaca Colorada have not been published yet, but Swenson and Warner (2012) note that the site was occupied between A.D. 600-800. Swenson and Warner (2012) also performed a reconnaissance survey south of Huaca Colorada on the Pampa de Paiján. The area surveyed was located geographically between Licapa II and Huaca Colorada and contained many examples of Moche V sherds. They also note roads in this region, suggesting a connection between the northern Chicama and southern Jequetepeque when Moche V was in use. Farther to the north, Pampa Grande (Shimada 1994) has both Geometric Moche V and Late Moche/Figurative fineline sherds (Johnson 2010) and dates to post 700 AD. There are also some examples of isolated Moche V finds, such as one sherd I found on Cerro Chepén in the Jequetepeque Valley, but these are rare.

To the south, Galindo also has examples of Geometric and Figurative Moche V sherds, but the geometric are much more abundant (Bawden 1977; Lockard 2005, 2009). Galindo also dates to post 650 AD. There are some examples of Geometric Moche V found along roads between the Chao and Santa Valleys suggesting that there was some movement further south (Pimentel and Paredes 2003), but the evidence in other southern valleys is sparse to nonexistent. Based on the information presented above I believe there is sufficient evidence to suggest that Moche V (both Figurative and Geometric) was developed and first produced in the northern Chicama Valley, possibly around Licapa II. From here the style spread north and south around A.D. 650. This will be explored further in the following chapter.

The late dates for the Late Moche contexts at San José de Moro indicate that the Late Moche style was developed after Moche V. Luis Jamie Castillo (2009) has suggested that the Late Moche style was developed in the Chicama Valley prior to its fully formed appearance in the Jequetepeque. The fact that Figurative and Geometric Moche V ceramics were likely developed in the Chicama Valley by 650 AD demonstrates that this was a fertile ground for innovation. The results from the petrographic data also suggest that there may have been some experimenting with Late Moche styles in Chicama clay. The late dates for the Late Moche contexts at San José de Moro further support that the initial innovation may have taken place to the south in the Chicama Valley.

### Implications for the Review of Radiocarbon Dates

In this chapter I reviewed the radiocarbon evidence from Licapa II. Based on 26 dates I show that the site consisted of basically two phases. The first phase began sometime around 450-500 AD and was characterized by the presence of Huaca A. Ceramics in and around this huaca were local wares. Sometime around 600 AD Huaca B and the platform to the north of Huaca B were constructed and the area in between the Huacas was now used for domestic/ utilitarian activities. Moche IV ceramics were adopted around 600 AD, but shortly after, and around 650 AD, Moche V ceramics are also adopted at the site. The two styles persist together until the abandonment of the site around 900 AD.

Because of the great number of dates I was able to obtain, I noticed some potential problems with the dating from different laboratories and based on the different materials dated. I presented some of the pitfalls of $^{14}C$ dating and cautiously warn that dates must be evaluated very carefully and not taken at face value. Even though there are potentially many problems with radiocarbon dating, with enough comparable dates and careful consideration, trends and patterns can be detected. Therefore, I compare the dates from Licapa II to dates obtained from seventeen other Moche sites. In this analysis I show that Moche probably began later and ended later than the traditional dates suggest and lasted from 300-900 AD. Also by comparing the ceramic evidence from the dated levels, this analysis shows that the regional differences in ceramics don't strictly follow temporal phases. For example, Moche I/II from El Brujo and Moche III and IV from Huacas de Moche overlap significantly. Early Moche contexts from Dos Cabezas also overlap with dates from El Brujo and Huacas de Moche. Even though some temporal progression is evident, for example Moche III does come before Moche IV for the most part, and at El Brujo, Moche I/II came before Moche III and IV, the variation in ceramic style seems to depend significantly more on geography and changing relationships and alliances between sites rather than purely on time.

Based on my research at Licapa II, coupled with a comparative analysis of radiocarbon dates and their associated contexts, it becomes evident that there was a shift in the Moche world around 600 AD. It was at this time when Moche IV ceramics were adopted at Licapa II, El Brujo, Cerro Mayal and elsewhere to the south. This Moche IV influence appears to have originated at the Huacas de Moche since Moche IV ceramics are found in earlier dating deposits at this site. With the adoption of Moche IV there may have been a reconfiguration of the north coast ideology in some locales. At Licapa II there was a reorganization of space in the ceremonial core as has been detailed in Chapter 4 and 7. Sites such as El Brujo were remodeled to reflect the same artistic program as the Huaca de la Luna.

Shortly after Moche IV is adopted at numerous sites, the Huacas de Moche undergoes significant changes. The Huaca de la Luna is abandoned and the focus of the site shifts, but the same ceramic style remains in use. Also almost immediately after the initial adoption of Moche IV, Moche V is invented, possibly in the northern Chicama Valley, as will be discussed in Chapter 9. The Moche V style then spreads out to sites such as Galindo, Pampa Grande, Pacatnamú, and Huaca Colorada after 650 AD, but remains concentrated around the branch of the canal that passes through Licapa II. This will also be discussed further in Chapter 9. Out from Moche V arises the Late Moche style prevalent in the Jequetepeque Valley.

Overall, from these comparisons we can see that Moche was a phenomenon that took place over an ever-changing and dynamic landscape. How and if these settlements were associated at any one point in time becomes crucial to understanding the geopolitics and ideological affiliations through time. The only way to evaluate the connectivity of sites is by understanding their contemporaneity. Comparing radiocarbon dates allows us to better understand the chronological development of Moche settlements and their associated ceramic and architectural styles. The next step is a Bayesian Model for all these Moche dates, which will hopefully allow us to better understand contemporaneity between sites and construct a stronger chronologies based on the $^{14}C$ dates and their archaeological contexts.

# CHAPTER 9

## SUMMARY AND IMPLICATIONS OF THE INVESTIGATIONS AT LICAPA II

In the preceding chapters I presented the Moche site of Licapa II and my research there. I focused my analysis on the ceramic and architectural evidence found at Licapa II to show how similarities and differences suggest associations between sites. Radiocarbon dating was used to understand how the site developed and how it was related to other Moche centers. Here, I contextualize the political role of Licapa II in the Chicama Valley and the Moche world.

My research has shown that two chronological phases characterized Licapa II, one pre-A.D. 600 and one post-A.D. 600. These two phases also are present at other Moche sites, making Licapa II an important case study for understanding Moche political organization. In the following section I review these two phases at Licapa II, focusing on the architecture and ceramics that distinguish them. I discuss how this evidence has helped elucidate the role of this mid-sized center in the politico-religious domain of the Moche archaeological culture. I end by revisiting my hypotheses for the role of this center that I posed in Chapter 1, and suggest future directions for continued field research at the site.

### Licapa II Pre-A.D. 600

#### Huaca A Form and Function: Architecture

My research has demonstrated that Licapa II was occupied for roughly 400 years.

The site began as a ceremonial center focused on the activities performed at Huaca A. From an evaluation of the ceramic, architectural data, and radiocarbon data, I suggest that Huaca A was a "temple"-like structure likely dedicated to rituals and activities surrounding the Sacrifice Ceremony, or something similar. This is evidenced by the ceramic goblets found within the structure and the stepped platform form of the structure itself (see Chapter 4), which may have served a similar function as other pre-A.D. 600 huacas, such as Huaca de la Luna and Huaca Cao Viejo. Huaca A was likely built sometime before A.D. 500 when the Huaca de la Luna and the Huaca Cao Viejo were still in use and dedicated to rituals and activities associated with the themes depicted in Moche iconography (Wiersema 2010).

Wiersema (2010) has shown that specific locations within the architectural complexes of El Brujo and Huacas de Moche were likely the locales where the Warrior Narrative was played out. These include structures with gabled roofs, *tablados* (elevated platform with a ramp), and sunken steps. The presentation of the goblet is depicted in Moche fineline as occurring above a row of step motifs seen in a series. Wiersema (2010:155) suggests that step motifs in series indicate important ritual space usually at an elevated level in a Moche monumental complex. At Huaca de la Luna, step motifs in series were found in the area bordering the parapet that leads to Plaza 3c, where the sacrifices occurred (Wiersema 2010:155; Verano 2001). At this time we do not have sufficient evidence to identify such features at Huaca A. However, the stepping of the east side of Huaca A could be referencing a similar space where events related to Moche rituals, such as the Sacrifice Ceremony, occurred.

Although there are many differences between Huacas A and the Huaca de la Luna and Huaca Cao Viejo, as outlined in Chapter 7, there are some similarities that make these structures quite different from Huaca B. First, they were all the product of architectural accretion and contain multiple superimposed building phases. Within the different building phases burials were found. These burials were placed in the fill of each building and were possibly offerings to the temples themselves, the gods, a deceased or new ruler, or some other event (Uceda 2010). Second, they contain highly visible spaces that were probably viewed from below. Plazas are associated with the Huaca de la Luna and Huaca Cao Viejo. We did not locate a clear plaza at Licapa II, but it is possible that one did exist on the east side. It is also possible that such area was not necessary with the ceremonies simply watched from the base of the structure. Because Huaca A is not an exact replica of Huaca de la Luna or the Huaca Cao, I suggest that the most important similarities among these structures may lie within their ritual function and not necessarily in their architectural forms.

Huaca A Ceramics

Ceramics associated with Huaca A were unique to the site itself or the general northern Chicama region. In this dissertation I refer to this ceramic style as the Licapa A style. More research in this region should show the geographical extent of the use of this ceramic type. The Licapa A ceramic style is quite different from the classic Moche IV and V styles that appear later at the site. No anthropomorphized, supernatural, or human figures are present and the ceramics are constructed with thick and sloppy slips. Both the slips and pastes are light orange in color compared to the orange-red seen in the Moche IV and V fineline styles.

Licapa A ceramics did not carry the iconic Moche images of the Warrior Narrative and Sacrifice Ceremony. On the contrary, rather than containing images of objects, such as painted scenes involving the passing of goblets, the actual objects associated with the scenes painted on the later ceramics were found in association with this huaca. This potentially suggests that there was a change in the way religion was practiced at Licapa II between the early and the later phase where the iconography is present, and as will be discussed more below.

Although Licapa A ceramics are distinct, a petrographic study of these wares shows that they share some characteristics with other later ceramics produced in the Chicama Valley or close to the site. The Licapa A ceramics also were similar to one *florero* sherd found at El Brujo, likely from the same time as when Huaca A was in use. Although preliminarily, the external and internal stylistic attributes of the Licapa A ceramics, as well as the presence of Moche III/IV sherds associated with this huaca show that the people at Licapa II were engaging in some way with people from other sites, such as El Brujo and the Huacas de Moche during this first phase. However, because of the differences in the architecture and ceramics, it does not appear as though the site was under the control of the larger centers. Rather, material evidence demonstrates a degree of autonomy of Licapa II. This autonomy allowed the people at Licapa II to forge relationships at numerous other Moche sites, especially in the later period as will be discussed in the next section. These alliances ultimately created a complex network of interconnected settlements across the Moche landscape.

## Licapa II Post-A.D. 600

Huaca B Form and Function: Architecture

After A.D. 600 major changes occurred at Licapa II. The focus of the site shifted from Huaca A to Huaca B and other areas of the site. However, as has been discussed, Huaca A continued to be used into this phase, but possibly for different purposes and as more of an historical monument. As noted, the form of Huaca B is quite different from Huaca A. Huaca B consists of the low huaca and the platform to the north. Both the huaca and the platform are composed of multiple rooms and restricted spaces. The ramp leading from the platform into the huaca was narrowed and the direction of the entryway was changed over time, possibly indicating that the access of this structure continued to decrease through time. This could relate to changes in the nature of the authority at the site through time or changes in the overall nature of Moche socio-political organization over time.

The huaca itself could have been the residence of Licapa II elite, or it could have been an administrative or ceremonial structure reserved for private affairs. The interior of the huaca is looted, but rooms and divisions are discernable. The space is such that the interior of the huaca would not have been visible to people outside the huaca's walls. This is in stark contrast to the highly visible terraces and/or steps of Huaca A.

The Huaca B platform seems to also have been more exclusive in its use, but evidence suggests that it was used for civic-ceremonial purposes and was not necessarily as private as the interior of the huaca. The large fire pit and four aligned *paicas*, as well as the amount of fine ceramics, and the presence of clean and well-prepared floors attest to its role in the preparation and execution of Licapa II festivities.

*The Empty Chamber: Implications for Political Organization*

On the huaca platform we found the possible evidence for an empty Moche tomb. Empty tombs are a fairly common Moche feature and have been noted at a handful of sites (Franco et al. 2003; Millaire 2002). At sites, such as San José de Moro, it has been noted that skeletons were moved there well after the decomposition process began, leaving the bones jumbled inside the coffin (Luis Jaime Castillo, personal communication). If the chamber on the platform was planned as a tomb, this would suggest one of two things (1) that an individual was never interred here, or (2) that a body was moved from here to another site, or a different tomb within the site. Either way, if this was a tomb, the lack of a body may indicate practices related to Moche political organization.

The movement of bodies from one site to another suggests that there was a great deal of movement of people between huacas centers. Perhaps people were brought back to their natal home after death, potentially after forging relationships in other regions or at other sites. The movement of bodies could also indicate centralized burial practices at a sacred place. Luis Jaime Castillo (2010) has suggested that important individuals from the various polities across the Jequetepeque Valley brought their dead to San José de Moro, as was discussed in Chapter 3. The funerary ceremonies were a way the living could potentially meet marriage partners, or maintain other social and political bonds. In this regard, the movement of individuals could also have occurred to maintain and foster relationships between centers well after the individual was deceased, either with or without his/her consent.

Another possibility is that the practice of emptying tombs could indicate political change and erasing the memory of past rulers. Uceda and Tufinio (2003) have suggested that offerings in the form of tombs were situated between construction layers of the huacas. At the Huaca Cao Viejo, between the penultimate and ultimate building phases the individual from Tomb 1 was removed and replaced with another occupant. Another tomb from the earlier phase was also found empty, suggesting that he or she was also removed, but not replaced (Franco et al. 2003). It is possible that changes in the rulership between these phases called for the exhuming and removal of certain individuals and the replacement and reuse of the tombs with others.

All of these scenarios may be related to the role ancestors played in Moche society. Ancestor worship was very important in Andean religion, as is especially noted for the Inka and their veneration of the mummies of departed Inka kings (Bauer 1998; Gose 1996). The idea of a central place, known in Aymara as a *marka,* for the gathering of kin groups to worship a progenitor ancestor and to participate in ritual competition has also been documented extensively for the Inka as well as ethnohistorically and ethnographically (Janusek 2004). Moche huaca centers could have also served a somewhat similar purpose. They could have been like *markas,* where people from disparate settlements joined together in certain times for worship and socio-political exchanges. The exhumation and reburial of certain individuals could have been part of the practices related to ancestor worship that served to maintain political and social ties.

The original function of the chamber at Licapa II will remain elusive without further investigations at the site. However, engaging with some of these possibilities may bring us closer to an understanding of political and religious dynamics in the Moche world.

Residential Life at Licapa II

The residential area between the huacas show that people lived at the site, or at least close to the huacas starting around A.D. 600-650. Since we only opened a small area, the extent of this residential space is not presently known. However, from the excavations and material analysis, it can be determined that the people using this space through all occupations were of high status. This is evidenced by the presence of fine personal adornments, such as combs and pendants. Also, the amount of fine ware ceramics is unparallel anywhere else on the site. The fact that these ceramics were found discarded between sealed floors, within hearths, and inside a *cuy* pen attests to them having use in every day life.

There has been a great debate over whether or not fine wares were tomb furniture and not actually used for ritual or ceremonial purposes. Bourget (2006) claims that they were exclusively used in funerary contexts. However, Donnan and McClelland (1999) suggest that they were likely used in ceremonies and rituals. The fact that they were actually used is also evidenced by use ware found on the bases of some fine vessels. My research, along with Johnson's (2010) and Shimada's (1994) at Pampa Grande, Lockard's (2005) at Galindo, and in the urban zone of the Huacas de Moche (Chapdelaine 2002) has shown that fine wares were also found in domestic and residential settings. Why they are found in these domestic settings remains a question, but for now we can say a much more complicated picture of fine ware use needs to be considered.

The platform-like structures lining the canal during the final phase of use in the domestic area between the huacas may attest to the increasing wealth of the residential population close to the huacas. However, since this area was so badly damaged from looting, I do not have a good understanding of the form and function of the platform excavated and the two other possible platforms located next to the canal. It is possible that they were part of residential structures, or that they were more monumental in nature and used for civic-ceremonial purposes, such as ceremonies associated with the canal. If these small platforms were used for civic-ceremonial purposes, then the people who once resided close to the huacas would have relocated to another part of the site, and possibly to the west of the monumental core where we performed the geophysical survey.

The geophysical data suggests that the population of Licapa II was much larger than just those residing and using the space between the huacas. Everywhere we surveyed we found rectilinear architecture that suggests compounds with internal room divisions. Because no ground-truthing was undertaken in this area, the significance of these features is unknown and a residential label cannot be conclusively assigned. I also do not know when this area was in use, but the architecture is oriented at a different angle from the architecture in the core, suggesting that maybe it was built after the main huacas. It is unlikely that this area predates the huaca construction because the surface ceramic assemblage mainly consists of later Moche ceramics. A future full coverage GPR survey, along with test excavations will clarify the function of this area of the site and confirm its contemporaneity with the other site structures.

*Full Time Occupation vs. Seasonal Use at Licapa II*

From the research at Licapa II it still remains unclear if the residential areas, and therefore the site itself, was in use year-round, seasonally, or only on certain occasions throughout its occupation. However, over the course of 400 years, there could have been periods of all types of use. Swenson and Warner (2012) suggest that Huaca Colorada was used during certain parts of the year and was not occupied fulltime. This is deduced by thin layers of aeolian sand overlaying floor surfaces, suggesting intermittent times of abandonment and reoccupation. The site was primarily used as a locus of metallurgical production because constant high winds made it desirable for these purposes. However, the winds also created difficult circumstances for full time occupation. They note that a seasonal pattern is also found in other non-elite residential sites in the Jequetepeque Valley (Dillehay et al. 2009; Swenson 2004).

Aside from Huaca Colorada, seasonal use of Moche monumental centers has not been fully addressed elsewhere. However, it is a distinct possibility that people only used sites such as Licapa II at certain times of the year, since supporting the population would have been dependent on the functioning of the irrigation canal that runs through the site. At certain times of a year, such as the summer months, the water discharge from the river would have been low, which could have potentially disrupted the operation of this marginal canal for periods of time. As discussed in Chapter 2, Netherly (1984:235-236) notes that the lands at the end of irrigation canals and on canals far from the river, were the least desirable and the most volatile of all the arable land within a valley[21]. Political

[21] Quilter and Koons (2012) note that the Huacas de Moche and El Brujo are at the end of irrigation canals where control of the irrigation system would have been difficult, if not impossible. They suggest that perhaps some Moche huacas were involved in systems of water distribution similar to temple management of irrigation in Bali (Lansing 1993) where the timing of when field sections were irrigated was linked to

squabbles with upstream settlements could have also disrupted canal flow. However, if storage were possible, as is indicated by the storage facility on the site, then seasonal occupation would be less of an issue since crops could be processed and stored nearby for year-round consumption. Furthermore, wild plants, such as zapote, would not have been affected by lack of year-round water supply and could have been more heavily relied upon during certain parts of the year. Trade and exchange could have also mediated the effects of low seasonal canal flow and supported long-term occupation at Licapa II. Excavations in the hypothesized residential area and in the possible storage facility in the future may enlighten our understanding of seasonality and crop production at Licapa II.

Ceramics Post A.D. 600

The ceramics associated with Huaca B and the residential area between the huacas, as well as the fine ceramics encountered during the surface collection to the west of the core were quite distinct from those found associated with Huaca A. In these areas Moche IV and Geometric and Figurative Moche V wares dominated the assemblage. Moche IV wares may have slightly pre-dated Moche V, but the two could have been adopted around the same time. Either way, this is the first site where Moche IV and V ceramics are found stratigraphically together outside of a tomb context (cf. Ubbelohde-Doering 1983), demonstrating that these are distinct Moche styles rather than temporal indicators.

At Licapa II there are examples of Moche IV and Figurative Moche V fineline ceramics that are exquisitely produced. The execution of the fineline imagery seen on

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when rituals were held at associated temples. Moche huaca center may have also employed the power of rituals as a way to turn a marginal position in the valley into a center of control. It should be noted that although these large centers are at the end of irrigation canals, they are both relatively close to the rivers compared to Licapa II. Also, El Brujo is located adjacent to the beach and in an area where lagoons supplied continuous access to fresh water (see Table 2.2 for land types and their desirability).

them is of the highest quality found in the Moche world. Since only fragments were found, I do not know if certain themes were prevalent at the site. However, when comparing the assemblages from Huaca A to what is found on the rest of the site some striking differences are apparent. The Moche IV and V fine wares are overwhelmingly from stirrup-spout bottles. Serving vessels, such as plates and bowls, although present, were much less common than the stirrup spout vessel. *Floreros* were also found in great quantity throughout most of the site and may have been used as ritual serving vessels. This is in contrast to the Huaca A ceramics where stirrup-spouts and *floreros* were absent from all but the uppermost layers and objects such as basins, plates, bowls and cups dominated the assemblage.

Other ceramics from after A.D. 600 include the Late Moche San José de Moro style finelines and one double spout and bridge vessel with central coast characteristics. The domestic assemblage was quite similar throughout the occupation of the site. However, less domestic wares were collected from Huaca A than from Huaca B and the residential area between the huacas so a much smaller sample exists of the pre A.D. 600 wares. In general, though, the trend shows that population increased and the people were participating in feasts and rituals using fine and domestic wares after A.D. 600.

### Changes at Licapa II and in the Moche World: The Origins of Moche V

The change in the ceramics is paralleled with the change in architecture at the site. These changes indicate that new types of ceremonies were performed, a new way of practicing the religion was introduced and adopted, or something else. The newly introduced vessels depicted images of what was occurring in the earlier Moche phases at Licapa II and elsewhere. As noted, passing of goblets may have actually occurred on

Huaca A, but the fineline ceramics showing the act did not arrive at the site until later and were not associated with this huaca. Based on radiocarbon dates, this change in ceramics was first implemented at the Huaca de Moche and spread out from there to other sites, including Licapa II, around A.D. 600.

The change is noticeable because of an increase in narratives on vessels from earlier times to later times, specifically from Moche I/II and III to Moche IV and V, and an increase in the overall number of vessels from the earlier to the later phase (Donnan and McClelland 1999). Quilter (2010b:64) interprets the shift in the ceramic art from single figures to narrative scenes as the vessels becoming more personal and individualized, which may have been the case. Likewise, the more detailed scenes could have been carrying a slightly revised or idealized ideological narrative and the vessels were the vehicles used to codify and spread it to a wider audience.

The change in ceramic art possibly related to a change in religious practice evokes archaism, or the deliberate use of material images or iconography from the past to frame new practices and legitimize them as being "traditional" (Patterson 2004; A. Smith 2011; see Burger 1976). Archaism can unify a discontinuous history by codifying iconography into a set of themes and present it as a conjoined whole (Smith 2011). Archaism is a political strategy related to the creation or the invention of tradition (Hobsbawm and Ranger 1983) or the use of social memory (Mills and Walker 2008; Van Dyke and Alcock 2003). It can serve as a strategy to unify a dispersed religious or political landscape under a single ideology. Placing entire elaborate narratives on Moche IV vessels could have been a strategic way to incorporate myths and themes from various Moche polities or ceremonial centers into one unified Moche ideal. The proliferation of this vessel style was a way to spread the message. It seemed to work to some degree as it was reproduced and emulated outside of the Huacas de Moche as confirmed by different petrographic compositions of vessels with similar art. The Moche IV style also seems to have inspired offshoots and other reinterpretations, such as the Moche V and Late Moche styles.

Moche V ceramics are abundant at Licapa II and are introduced shortly after, if not around the same time as Moche IV. As was discussed, both figurative and geometric finelines are found on the site, but the figurative are difficult to distinguish from Moche IV finelines without the spout. Petrographic evidence shows that the geometric variety was likely produced near Licapa II, potentially indicating that this is the area where the Moche V style originates. Moche V ceramics are only found in quantity outside the Chicama Valley at the sites of Galindo to the south and Pampa Grande to the north. They are also found in the southern Jequetepeque Valley at Huaca Colorada and just across the river in Pacatnamú. Moreover, Swenson and Warner (2012) conducted a survey south of Huaca Colorada and into the Pampa de Paiján just to the north of Licapa II and found a high number of similar Moche V vessels. They suggest that the people from the Chicama were traveling to the north through the Pampa de Paiján and bringing their vessels, or the knowledge on how to make the vessels, with them. Likewise, people could have been traveling to the northern Chicama Valley from the Jequetepeque Valley and returning with the vessels and/or the knowledge. Although the dating of Pacatnamú and Huaca Colorada is incomplete at this time, the introduction of Moche V at Galindo and Pampa Grande postdates that at Licapa II by at least 50-100 years, as was discussed in the previous chapter. This coupled with the overwhelming majority of Moche V vessels from the Larco Museum originating from the northern Chicama Valley may indicate that this was the locus of development of this ceramic style.

A search for Moche V vessels in the Larco Museum collection found that 207 vessels could be identified as explicitly Geometric Moche V or Figurative Moche V. The provenience of most of these vessels is unknown and was just listed as "North Coast," but the majority of the remainder came from the northern Chicama Valley, specifically from the area around Paiján and Tchuín (Table 9.1 and Figure 9.1). None of the ceramics in the Larco collection were from Licapa II, potentially indicating that he did not excavate here or that he called the site by a different name. The sites of Santa Ana and Resbaladero were not marked on his map and I am unclear of their exact location. One of these sites could possibly be Licapa II since we now know that it was an important Moche V center in this valley.

The overwhelming majority of vessels from the Larco collection in general are from the Chicama Valley. However, there is a much higher amount from the northern Chicama Valley. Although more research needs to be conducted, I suggest that the high number of Moche V vessels from the northern Chicama Valley, coupled with the earliest dates for this ceramic style from Licapa II suggests that the Moche V style was developed and spread from the northern Chicama sometime around 650 AD.

**Table 9.1: Moche V and Late Moche vessels from the Larco collection from the North Coast in general, the Chicama and Virú Valleys (total number of Middle Horizon [post A.D. 600] vessels). The blue labels show site in the northern Chicama Valley. Green denotes site near the neck of the Chicama Valley and the location of sites in red is unknown.**

| Region/Valley/Site | Figurative | Geometric | Late Moche | No Design |
|---|---|---|---|---|
| *North Coast* | 15 | 107 | 8 | 9 |
| | | | | |
| *Chicama Valley* | 3 | | | 1 |
| Paiján/ Tchuín | 3 | 39 | 1 | 2 |
| Chiquitoy | | 8 | | |
| Sausal | | 5 | 1 | 1 |
| Facalá | 4 | 1 | | |
| Santa Ana | 1 | 3 | | |
| Salamanca | | 2 | | |
| Resbaladero | | 2 | | |
| Ascope | 1 | 1 | | |
| Cerro de Cabras | | 2 | | |
| Mocán | 1 | | | |
| El Brujo | | 1 | | |
| Roma | 1 | | | |
| Mocollope | | 1 | | |
| | | | | |
| *Virú Valley* | 1 | | | |
| Huancaco | | 2 | | |
| Salinas | | 1 | | |
| Guañape | | 1 | | |
| San Ildefonso | | 1 | | |

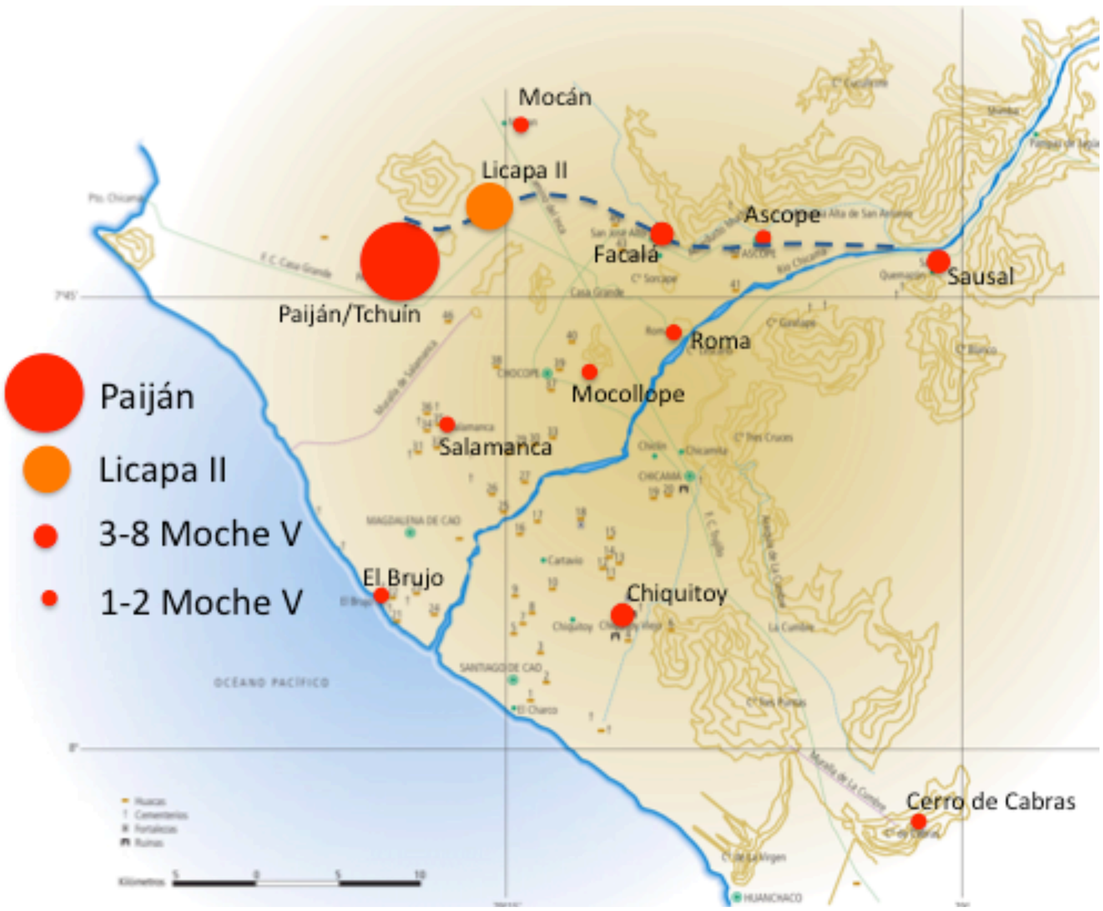


**Figure 9.1: Chicama Valley showing the sites with Moche V vessels from the Larco collection. Size of the dot indicates the number of ceramics found at the site of these styles. Licapa II is shown in orange since Larco did not identify it as a site with this type of ceramics. The general location of the canal is shown by a dotted blue line (after Larco 2001:35).**

## Colonial Canals and Political Organization

The majority of the sites that have a high number of Moche V ceramics cluster around the branch of the canal that runs through Licapa II. It is possible that this may have some significance if we look at the organization of the canal system and the different polities in the Chicama Valley during the colonial period. When looking at maps of the irrigation from colonial times, the *Colupe* canal is possibly the same as the Licapa II canal, suggesting the longevity of its use (Figure 9.2). I was told by a local residing in the town of Garrapón near Licapa II that this canal continued to function up until the 20th century. Below I describe how the principles of colonial period political organization related to the maintenance and functioning of this canal system and how this possibly relates to the proliferation of Moche V.

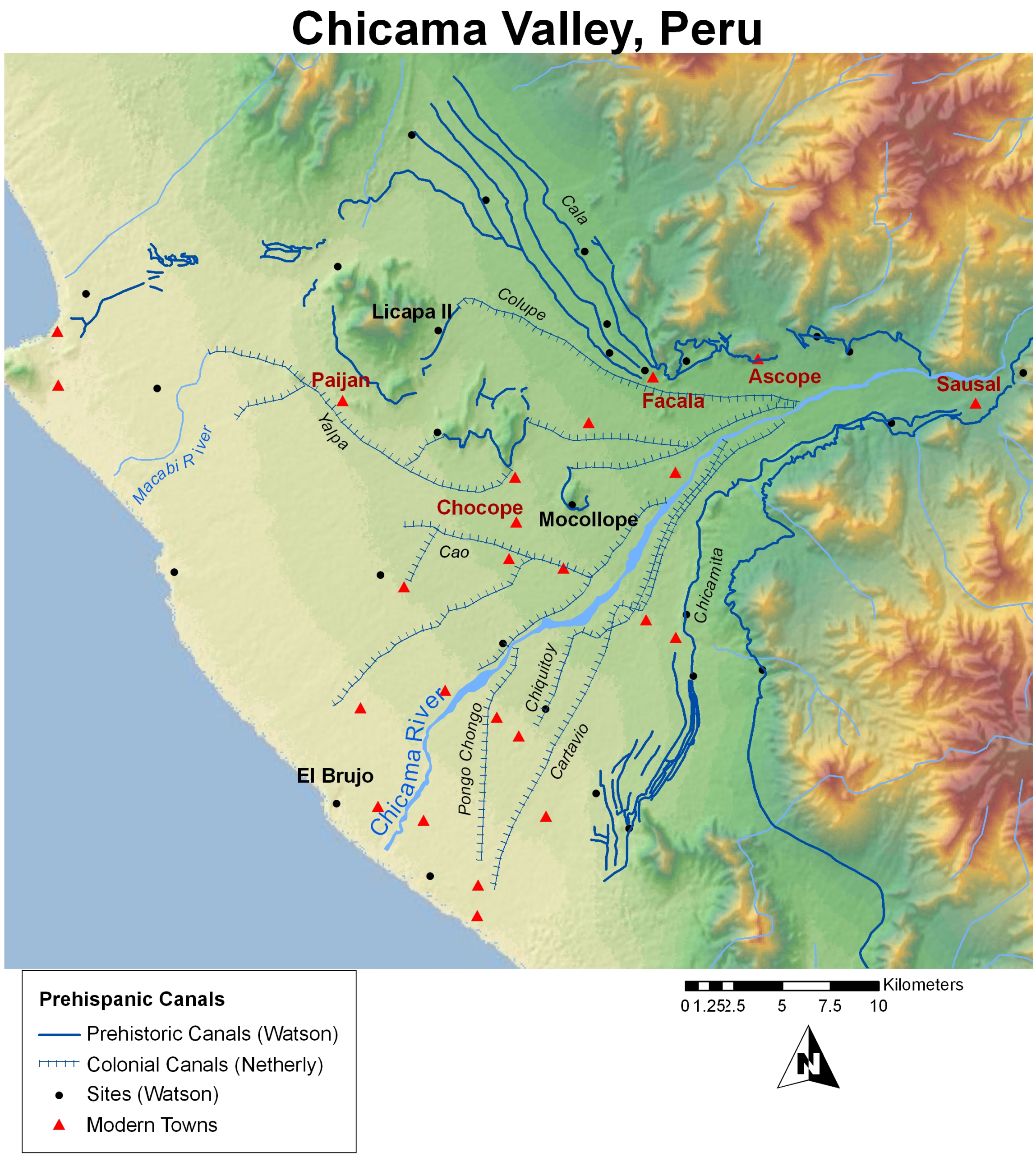


**Figure 9.2: Map showing extant prehistoric canals mapped by Watson (1979), colonial period canals identified by Netherly (1984) (also see Figure 9.3), modern towns and ancient sites mentioned in the text.**

The main principals of colonial organization in the Chicama Valley and the North Coast of Peru in general are based on nested hierarchies of leaders and groups of common people below these leaders, as was discussed in Chapter 1. We have good evidence for how this organizational system operated in the Chicama Valley from the research by Patricia Netherly and Susan Ramírez. Netherly (1984) indicates that there are numerous colonial documents from the Chicama polity from 1565-1570. This polity did not encompass the entire geographical area of the Chicama Valley, just the lands from south of Chocope to the uptake of the canals to the east near Sausal (see Figure 9.3 for polity division and Figure 9.2 for location of Sausal).

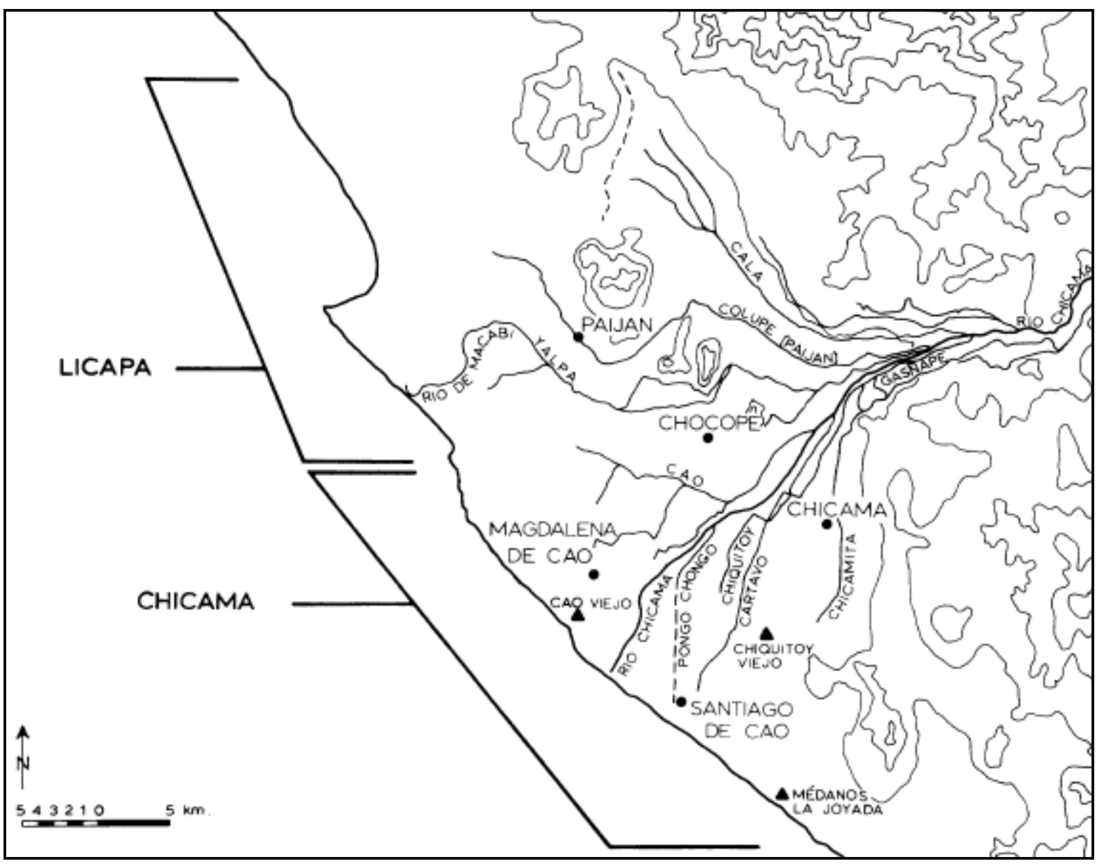


**Figure 9.3: Colonial period canals documented by Netherly (1984). Here she also shows the Chicama/ Licapa polity divisions (Netherly 1984:232)**

For the Chicama polity, the river and the irrigation network dictated its division into four constituent parts that corresponded to the lands of the *cacique principal, segunda persona,* and two lower level *principales*. The land on the north bank of the river around Chocope was under the control of the *cacique principal.* The land around the *Cao* branch of the canal was under a *principal.* The *segunda persona* and another *principal* were in charge of the two divisions of land on the south bank of the river. Furthermore, the documents suggest that there were other nested hierarchical divisions that further partitioned the *parcialidades* and the land.

The *Yalpa, Colupe* and *Cala* canals watered the lands to the north of Chocope and were part of the Licapa polity, which was the counterpart and lower moiety to the Chicama polity (Ramírez 1995). Remains of these canals can be seen today and are mainly associated with prehistoric settlements. In fact, most canal systems were developed to their full extent by the Late Moche times (Castillo 2010; Eling 1987; Watson 1979).

As mentioned, the *Colupe* canal is likely the same canal that runs through Licapa II. This canal winds around Cerro Licapa and Cerro Azul until it ends on the west side of Cerro Azul above Paiján (see Figure 9.2). Unfortunately, the original uptake and course before it reaches Cerro Azul is difficult to locate today due to intensive sugar cane agriculture. However, its origins were likely near Facalá. The *Cala* canal system is associated with large Moche, Middle Horizon, and LIP settlements along the northeast extreme of the arable land in the Chicama Valley. Remains of the *Yalpa* canal are found on the southern side of Cerro Constancia in an area where there are many Lambayeque, but also Moche remains. These canal systems, like the *Colupe* branch, are also not in use today.

Unfortunately, we do not have as much information on the colonial era Licapa polity outside of the locations of the canals. We do know that it was divided into at least two parts, the section around Licapa II and the current town of Paiján was known as Licapa, and the section around the coast was known as Malabrigo in the colonial documents (Ramírez 1995). Licapa was the upper moiety of the two. Although still away from the river, Licapa had much better access to water than Malabrigo and the documents indicate that the people from Malabrigo were primarily fishermen. Elsewhere in the documents fishermen tend to be subordinate to agriculturalists (Ramírez 1995). Therefore, water rights would have been of great importance.

Water rights in the early colonial era were the responsibility of the lords who allowed subjects access to the supply in exchange for labor (Hayashida 2006:247; Ramírez 1996:18). Lesser lords owed tribute to higher lords in exchange for water rights, and in some cases coastal *parcialidades* could exchange goods, such as salt, cloth and marine products with highland lords for access to water rights (Hayashida 2006; Ramírez 1996). Because of the nature of the organization, if there were a conflict over water rights between two moiety divisions or *parcialidades*, then the paramount lord would be responsible for its settlement.

Water rights during the Moche era would have also required organized political management, and some scholars claim that the development and expansion of the canal system was linked to political subjugation and state control (Billman 2002). Others, such as Luis Jaime Castillo (2010), have shown that the canal system expansion can be traced based on the adoption of different ceramic styles in different parts and different times in the Jequetepeque Valley. In the earlier phases the canals were clustered around the river and the materials associated with these canals were early in nature. The Late Moche style is prevalent along the northern part of the Jequetepeque Valley, and thus corresponds to the late expansion of the canal into this region.

The patterns we see in the Chicama Valley may represent a somewhat different situation since radiocarbon dates have shown that Moche IV and V are contemporary. Rather than corresponding to the growth of the irrigation system through time, moiety organization could explain the material differences we see between the northern and southern Chicama Valley. If the Moche V style was associated with a political unit, perhaps a moiety, located in the former region of the Licapa polity, this is possibly why more Moche V artifacts cluster around the canals located there. It is, therefore, possible that Chicama/Licapa moiety division from the colonial era had its roots in the Moche period and was physically marked by differences in the material culture associated with the canals. To test this hypothesis excavation at other sites along the Licapa II, or *Colupe,* canal for Moche V materials should take place. Furthermore, the canal at Licapa II possibly predates A.D. 600. The Licapa A style should be traced to see if similar artifacts from an earlier time period are also found along this canal. Identifying earlier artifacts along this canal could help trace when it was constructed, like Castillo (2010) has done in Jequetepeque.

If a political system similar to that of the colonial era was in place during the Moche era, then it makes sense that Moche IV materials would be found in association with Moche V materials. Moche IV could have been a style associated with a dominant polity that possibly crosscut valleys. Russell and Jackson (2001) have applied the *parcialidades* system to the Moche period. They suggest that the paramount lord of the Chicama Valley (and the Chicama polity) was seated at Mocollope. Since the *parcialidades* were organized by economic activity, they suggest that the specialist at the fine ceramic workshop at Cerro Mayal formed their own *parcialidad.* Russell and Jackson (2001:172) suggest that:

> "the distribution of ceramics was embedded in the local hierarchy. For example, the local-level leader of Cerro Mayal would have owed a production quota to the higher-level lord at Mocollope, who in turn supported the production. The lord of Mocollope would then redistribute these products down the hierarchy though reciprocal obligations and status-display at ritual events. Labor and goods flowed up the hierarchy; ceramics and other items flowed down the hierarchy."

This could be one possible way that the *parcialidad* system worked and why Moche IV and Cerro Mayal ceramics are found at Licapa II. However, other systems could account for the distribution of Moche IV and V ceramics as well.

It should be noted that although we can glean information from the Spanish documents, on the ground the *parcialidades* were very flexible in their organization and structure, much more so than the later Spanish documents indicate (Ramírez 1995). The communities were not static institutions; they changed alliances and loyalties often. These changing alliances and loyalties could account for Moche V spreading outside of the northern Chicama and into other regions and for the variety of different materials found at different Moche sites. Overall, if the similarities in Moche material culture are due to a shared religious tradition involving prisoners, sacrifice, and the presentation of goblets of blood, then the difference may be based on polity divisions and the nested bases of political authority.

I note in Chapter 7 that Moche IV and V materials and Huaca B are on the north side of the canal and the Licapa A style and Huaca A are found on the south side of the canal. Netherly and Dillehay (1986) have shown that canals were used to internally divide space within prehistoric settlements on the north coast. Although there are temporal differences in the site sectors at Licapa II, the canal may have also served to divide space on a site level, and not just the valley level. The Moche V and Licapa A style should be traced farther to see if there are any spatial patterns to their occurrence outside of Licapa II. For example, is the Licapa A style only found on the south side of the canal and Moche V on the north side? If patterns do emerge, this could be further linked to the nested base of authority and sociopolitical divisions within Moche society.

As has been discussed, the scale of Moche settlements could also be related to the nested nature of authority in Moche times derived from a colonial model. Moore (1995) contends that the proportion of the sizes of the settlements with public architecture reflect what we would expect if a *cacique principal* could access twice as much labor as was available to the *segunda persona,* who in turn could access more labor than the lesser lords. Therefore, Licapa II's size could relate to the position its leader held in the organizational hierarchy. This is the largest settlement in the northern Chicama Valley. However, it is only medium in size compared to other settlements in the rest of the valley. Therefore, Licapa II could have been the seat of the *cacique principal* of a lower moiety, or a *segunda persona* to an upper moiety. Although direct correlation may be an example of *lo andino*[22], thinking about settlement organization across the landscape in these terms,

[22] Many Andean specific models are dismissed for drawing too much on the concept of *lo Andino,* or the idea that all things, including organization in the Andes, were uniquely Andean (Jamieson 2005; Starn 1991). The problem with *Lo Andino* is that it implies an essentialism that removes cultures and people from history and time.

as well as in conjunction with the growth and development of irrigation systems (Castillo 2010; Netherly 1984; Watson 1979), can have great impact on the way we understand Moche political organization.

**Climatic Change, Reorganization, and Collapse**

I have discussed at length the major political/religious reorganization at Licapa II and elsewhere in the Moche world around 600 AD. It has been proposed that reordering was in part related to the series of droughts and particularly strong El Niño events that occurred during this time period (Bawden 1999; Dillehay and Kolata 2004; Moseley and Deeds 1982; Moseley et al. 2008; Shimada 1994). Scholars have suggested that these variable conditions would have weakened the power, authority, and legitimacy of the ruling class and caused major reorganization throughout parts of the north coast (Bawden 1996; Shimada 1994; Swenson 2007). Drawing on Marxist theory, Bawden (1996), among others, suggest that people will only buy into an ideological system if there is a beneficial return for them. By participating in the system, they help to produce and reproduce the ideology of society. Religious practices and rituals, such as the Sacrifice Ceremony, and others like it, tend to reinforce ideological relations of power because rituals not only empower the participants, but also legitimize the overarching religious authority. If the people lose faith in the religious authority revolt by the people, reorganization by the elites, or both, will eventually occur.

Bawden (1996) proposed that drought and El Niño, which destroyed houses, fields, irrigations systems and temples, caused social and economic disturbances between Moche IV and V (originally thought to be around 550-600 AD). He proposed that these climatic events led the Moche people to ultimately lose faith in their gods and rulers, who were the mediators, or even god-impersonators, and were supposed to protect them. The ruling class was forced to make political and ideological changes to regain the support of the people. Bawden (1996) and Shimada (1994) have suggested that this reorganization led to the abandonment of Huacas de Moche and the establishment of Galindo and Pampa Grande. The Moche IV style, with its overtly symbolic iconography, was rejected for the Geometric Moche V, which was thought to demonstrate the ideological shift in organization. From radiocarbon dating and refinement of the ceramic sequence we now understand that the relationship between Moche IV and V was much more complex (Lockard 2009). And since the sites were occupied at the same time, the relationship between people at Galindo, Pampa Grande and Huacas de Moche was also likely much more complex than had been originally proposed. However, as I have discussed throughout this dissertation there was a marked change in organization in the Moche world sometime around 600 AD. How and if this relates to climate change on a regional level needs to be reevaluated in light of our new understanding of radiocarbon and ceramic data.

Climatic disturbances may be detectible in the archaeological record on the site level. However, in light of a reevaluation of radiocarbon dates and general Moche chronology, how these disturbances affected past human populations and political organization on a more regional level needs much better correlation and consideration. A detailed identification and dating program need to be undertaken to fully understand the archaeological and chronological relationships of floods and droughts among the different valleys and different settlements. With this we will be able to build better histories on the nature and extent of these events throughout the north coast region and how they relate to political organization and change.

Evidence for climatic disturbances comes from two different time periods and two different sources at Licapa II. First, mollusk evidence from the site shows that there may have been a shift in climatic patterns between the use of Huaca A and the use of the upper levels of occupation in the residential sector and Huaca B. This shift is possibly related to shifts in the ENSO cycle, as was discussed in Chapter 5. It is possible that the proxy shell records from Licapa II indicate a climatic event or events that had much greater impacts in other parts of the north coast, such as devastating rains, increased dunes, and floods (see Moseley et al. 2008). In other valleys these changes could have been so significant so as to lead to the reorganization of Moche around 600 AD. Even if effects of these events were not detectable at all Moche sites, such as Licapa II, the political repercussions were likely felt. Although this is a potential scenario, there is not enough evidence at this time to specifically correlate climate and political change at Licapa II.

The second form of evidence for a climatic event at Licapa II comes from the flood deposits found in Unit 4 and described in Chapter 4. The flooding event may have occurred just prior to or after the abandonment of the site. The evidence for the flood was only found on the Huaca B platform, since water ran into this area. It is obvious that the event would have had significant impact on daily life at the site if it was still occupied at the time. If the flood happened at the abandonment of the site, which seems plausible based on the stratigraphic evidence, then radiocarbon data from other sectors of the site suggests that this event occurred around 800-850 AD. In the future I intend to better trace and date these flood deposits at the site to better understand how they relate to the occupation.

Whether or not these climatic and other natural disturbances, such as the noted earthquake, contributed to the political changes that occurred around 600 AD and/or the ultimate abandonment of the site can only be speculated at this time. Furthermore, as a single factor is usually never the only cause, it was likely a combination of social, political, religious and environmental factors that led this reorganization and then again to the ultimate collapse. Nonetheless, in light of the new chronological data the relationship between climate and politics needs to be readdressed.

## Licapa II in the Moche World

Understanding politics in terms of the geography of the north coast of Peru is vital because of the constraints imposed by the natural and physical setting. This includes the management of the irrigation system, as discussed above. Also, in order to critique the currently accepted boundaries between the northern and the southern Moche, a geographic approach to politics is imperative.

As has been discussed elsewhere (Johnson 2010; Lockard 2005, 2009; Shimada 1994; Swenson and Warner 2012; Ubbelohde-Doering 1983) and as I have shown in this dissertation, the Moche V style crosscuts the northern-southern Moche boundary that has been recently established (Castillo and Donnan 1994a; Castillo and Uceda 2008). This style, rather than relating to time, likely relates to some political or religious affiliations among the sites producing and using this ware. Geopolitical relationships are apparent through the adoption or rejection of certain types of material culture (Smith 2003). In this dissertation I have addressed the interconnectedness of settlement system nodes through an examination of similarities and differences in the manifestations of monumentality and the nature of craft production, consumption, and exchange of ceramics between centers.

In the introduction I outlined three possible hypotheses to test based on the ceramic and architectural data encountered. To reiterate these are: (1) The Dependence Model: if the artifacts and architectural styles at Licapa II are the same in all respects to those found at El Brujo and Huacas de Moche, then Licapa II was likely a secondary center to either El Brujo, Huacas de Moche, or both. This first model would suggest that there was an overarching political system such as the state. (2) The Independence Model: if artifact and architectural styles at Licapa II were distinctly unique, then this would suggest that Licapa II was independent and challenges the validity of the southern Moche state. (3) The Dynamic Model: if artifact and architectural styles at Licapa II have characteristics seen in both the north and the south, as well as unique styles, then we need to reevaluate our understanding of the nature of the fluidity of Moche socio-political and economic dynamics, and redefine the currently accepted established boundaries that have been recently drawn between the north and south.

In Figure 1.8 I outline four possible combinations of internal and external styles as they relate to these hypotheses. I note that this framework could be applied to ceramics and architecture. This figure shows that (A) similar internal and external styles of material culture between sites would signify a shared ideological, political or economic system, and suggest that the sites where these ceramics are found were affiliated. In contrast, (B) sharp differences in both internal and external styles between sites would suggest limited affiliation. (C) Similar technology and/or materials but different surface styles would imply shared economic spheres but different ideology. Finally, (D) similar surface designs but different internal composition would suggest shared ideology and even politics, but local manufacturing, suggesting political alliances but with local control (Clark and Parry 1990; Costin 1991). Also, I note that in the case of ceramics and other portable art, if the objects themselves were moved, this could signify a broad exchange network and a different type of sociopolitical interaction (Arnold 1985; Hill 1977; Plog 1976; Rice 1987).

My investigations into the ceramic manufacturing from Licapa II, El Brujo, San José de Moro, Huacas de Moche and Cerro Mayal show that the (D) similar surface designs but different internal composition suggest shared ideology and possibly politics, but local manufacturing. This implies probable political alliances and/or religious affiliation with other centers, but that Licapa II was locally managed and controlled. I also identified traded or exchanged ceramics between centers. This indicates that the people at Licapa II maintained relationships with people at other centers. These relationships could have been based on marriage or kin ties, politics, economics, or religion. Whatever the exact nature of the relationships, they were expressed through a shared set of symbols represented on the portable art, as well as by the form and implied function of certain vessel types, such as the goblets and stirrup-spout bottles.

Architectural similarities and differences between centers are a little more difficult to evaluate than ceramics, mainly because of the dearth of detailed studies on the architectonics of huacas. In Chapter 7 I discussed similarities and differences in Moche architecture between sites in detail. I noted that many aspects between the different centers are shared, but each site, or huaca, appears to be for the most part unique. Some aspects of Moche huacas, such as the fact that they are constructed of adobe bricks, are universal features. However, huaca orientation, form, and construction techniques may have been dependent on the specific landforms close to the site, celestial alignments, or other religious, economic, social, or political factors. Although geographic location may have had an impact on the specifics of the architecture, certain ceremonies and rituals performed at huaca centers, such as the Sacrifice Ceremony, connected Moche settlements in a larger network. Therefore, participation in the common religious system integrated Licapa II into the Moche world. As religion and politics changed throughout the north coast, Licapa II adopted these changes, making this site an excellent case study for elucidating Moche geopolitical dynamics.

Overall, through my analysis of ceramics, architecture, and radiocarbon dates, I show that Licapa II was likely an independent center intimately connected to a dynamic and fluid landscape of interconnected nodes in an ever-changing and complex network of sites. In this network, alliances and relationships crosscut the northern and southern Moche boundary that has recently been established. This research shows that we need to reevaluate the nature of this recently established boundary, and our understanding of Moche politics in general by performing more research on smaller huaca centers and obtaining better contextualized radiocarbon dates.

In recent years many scholars have challenged neoevolutionary theory (Pauketat 2007; Quilter and Koons 2012; Smith 2003; Yoffee 2005). All suggest simplistic models for political organization, such as the state, pigeonhole cultures and societies into predefined types and do not account for the unique histories and the complex power relations of people and the places that they occupied. Over the last century the concept of the state homogenized our understanding of the Moche political landscape. Recent research, including what I presented here, demonstrates that relationships among centers was much more complex and varied than the state model suggested. We are now faced with attempting to redefine Moche political interactions. Drawing on Maya models may help move the understanding of Moche politics in a fruitful direction (Benson 2010).

Fifty years ago the Maya were also thought to be a state. More recently work by Martin and Grube (2000), among others, has shown that southern Maya lowlands were divided into numerous structurally autonomous small city-states. None of the city-states were powerful enough to transform the entire region into a single political unit (Grube 2000). These city-states were politically autonomous in internal relations, but all were part of a larger regional network where territory was less important than political ties to other polities.[23] The organizational situation may have been quite similar for the Moche, even if "city-state" is not the appropriate label for Moche settlements (cf. Millaire 2010).

Even though we do not have text for the Moche, I believe that more detailed investigations into the material culture, coupled with more well-contextualized radiocarbon dates, from Moche centers of every size will eventually allow us to construct similar models of Moche organization. Through these investigations the concept of the Moche state will be replaced with the idea of ever-changing networks of relationships across a complex geopolitical landscape. Research presented here from Licapa II has led us closer to this more complex understanding of Moche political dynamics and has shown that from the smaller centers great insight into the larger system can be gained.

[23] Susan Ramírez (1996, 2005) contends that at the time of contact indigenous South Americans did not have the same concept of territory or private property as the Spanish. Boundaries were constantly in flux and defined by kinship, ethnicity, and personal ties and not by landownership. The geopolitical landscape was characterized by a heterogeneous and disjointed configuration of interconnected peoples and places with distinct material cultures. As we amass more information, it appears as though Moche political organization may have been quite similar.

## Future Directions

Future research at the site of Licapa II will take a number of directions. First, I aim to further understand the form and function of Huaca B. A much larger area inside this huaca will be opened to better identify the sequence of construction and the activities performed in its various sectors.

Second, I plan to re-open Unit 2 to see if indeed a large tomb existed inside this huaca. I would also like to clear off more on the east façade to determine if it was composed of steps, terraces, or a combination of both. Third, I would like to conduct a more extensive ground-penetrating radar survey in the hypothesized residential area to the west of the main core. This survey will aim to reveal more structures and features and map their physical extent. It will also attempt to map old watercourse, or channels, that carried runoff from Cerro Azul in times of extreme rains. I also plan to place some excavation units to reveal the sources of the GPR reflections that I believe are structures. The possible storage area in this sector will also be excavated to identify its function.

Finally, I plan to undertake a survey of Cerro Azul to understand how the other settlements in the immediate region relate to Licapa II, both in space, time, and form. In this survey I plan to better identify the nature and impact of the large-scale flooding event that is visible in Unit 4 and collect radiocarbon samples related to this event. This information will allow us to better understand if a climatic event was ultimately one of the major catalysts for the abandonment of the site around 850 AD or if it occurred post-abandonment. Together this combined research will further refine our understanding of this important mid-sized Moche center and how it was integrated into the larger Moche world.

# APPENDIX A

Excavation Forms and Data (Supplement to Chapter 4)

## APPENDIX A.1

Code System for Artifacts

Site-L2: Licapa II
Unit-U#: Excavation unit number or surface collection grid number
(Feature [R], Extension [N. Ext, S. Ext], Tomb [T], Room [A])*
Level-N#. S for surface. D for density (an analysis that was not performed)
(Feature [R], Extension [N. Ext, S. Ext], Tomb [T], Room [A])*
Material:

- Ce-Ceramic (sometimes listed as just C)
- Ma-Shells
- OH- Human Bone
- OA- Animal Bone
- Me- Metal
- Ma- Wood
- Or- Organic Material (sometimes just O)
- Ct- Beads
- Ot- Other
- V- Various (V and Ot are the same)
- Li- Lithic
- S- Soil
- P(i)- Spindle Whorl

Material number for that level/context- For example L2-U4-N5-Ce1, L2-U4-N5-Ce2

* Can come before or after the level if the feature has levels within it.

# APPENDIX A.2

Site Forms

PROYECTO ARQUEOLÓGICO LICAPA II
Ficha de Artefactos

Ticket # ........................................ Artefacto # ......................................

Unidad ............................................. Prof-sup. ...........................................

Nivel.............................................. Prof-inf. .............................................

Rasgo............... ........................ Excavado por ..................................

Dibujo # ...................................... Fecha .............................................

Ubicación contextual ..................................................................................

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Descripción....................................................................................................

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PROYECTO ARQUEOLÓGICO LICAPA II
Ficha de Artefactos

Ticket # ........................................ Artefacto # ......................................

Unidad ............................................. Prof-sup. ...........................................

Nivel ............................................ Prof-inf. .............................................

Rasgo...................................... Excavado por ..................................

Dibujo # ...................................... Fecha .............................................

Ubicación contextual........................................................................................

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| | | | | | |
|---|---|---|---|---|---|
| Cerámica | ☐ | Metal | ☐ | Orgánico | ☐ |
| Oseo Hum | ☐ | Textil | ☐ | Malacol | ☐ |
| Oseo Anim | ☐ | Líticos | ☐ | Suelo | ☐ |
| Cuentas | ☐ | Piruro | ☐ | Madera | ☐ |
| Otro | | | | | |

| Conservación | | | |
|---|---|---|---|
| Buena | ☐ | Completo | ☐ |
| Regular | ☐ | Incompleto | ☐ |
| Mala | ☐ | Roto | ☐ |
| Porcent | ☐ | # Piezas | ☐ |

| | |
|---|---|
| Foto | ☐ |
| Muest | ☐ |

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|---|---|---|---|---|---|
| Moche I-II | ☐ | Moche III- IV | ☐ | Moche V | ☐ |
| Moche Tardio | ☐ | Horizonte Medio | ☐ | Chimu | ☐ |
| Otro | | | | | |

Descripción ..................................................................................................

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## REGISTRO DE RECOLECCIÓN SUPERFICIAL

TOTAL BOLSAS

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| Sector | | | |
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| Ceramica (#) | | Cerámica (SW) | |
| Oseos (#) | | Oseos (SW) | |
| Metal (#) | | Metal (SW) | |
| Malacologicos (#) | | Malacológicos (SW) | |
| Litico (#) | | Litico (SW) | |
| Otros (#) | | Otros (SW) | |
| Total Diagnóstico | | Total Densidad | |

Observaciones

*Proyecto Arqueológico Licapa II*

**REGISTRO DE EXCAVACIÓN**

Proyecto ______________________

Unit ______________________ Sitio ______________

Rasgo ______________________ Sector ______________

Catalogo N° ______________________ Subsector ______________

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## REGISTRO DE ADOBES

Sitio ..............................
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Cuadro ..............................
Cuadrícula ..............................
Perfil ..............................

Registro ..............................
Ficha ..............................

| N° Elem. | Dimensiones | | | Ubicación | Contenido | Técnica | Color | | Otros Datos |
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| | Largo | Ancho | Espesor | | | | Munsell | Cailloux | |
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**4. REGISTRO DE ENTIERRO**

Proyecto

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Sitio___________________ Cuadrícula_____________

Sector_________________ Subsector______________

Cuadros________________________________________

Profundidad de_______________a___________________

Capa__________________________________________

Intruyendo desde_________________________________

Matriz_________________________________________

Fosa__________________________________________

Sobre lecho de_________________________________

Cubierta_______________________________________

Nicho_________________________________________

Cista__________________________________________

Olla__________________________________________

Tumba_________________________________________

Objetos asociados_________________________________________________________________

Modo de entierro________________________________

Posición general_________________________________

Orientación mayor_______________________________

Sexo__________________ Edad__________________

Posición cabeza_________________________________

P. Tronco______________________________________

P. Ext. Superiores_____________________________

P. Ext. Inferiores_______________________________

## REGISTRO FOTOGRÁFICO

Sitio ..........................................
Fecha ..........................................

Rollo N° ..........................................
Tipo de Película ..........................................
Asa ..........................................

| Foto N° | Sector | Cuadro | Capa | Fecha | Lente | Descripción |
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# APPENDIX A.3

Artifact Catalog

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| CE001 | 1 | C | L2-J8-D-Ce1 | 10/03/10 | 46 | 3 | | | Southwest corner 2x2 |
| CE001 | 2 | C | L2-I9-D-Ce1 | 10/03/10 | 98 | 4 | | | Southwest corner 2x2 |
| CE001 | 3 | C | L2-J6-D-Ce1 | 10/03/10 | 142 | 5 | | | Southwest corner 2x2 |
| CE001 | 4 | C | L2-H1O-D-Ce1 | 10/03/10 | 104 | 3 | | | Southwest corner 2x2 |
| CE001 | 5 | C | L2-I7-D-Ce1 | 09/03/10 | 232 | 13 | | | Southwest corner 2x2 |
| CE001 | 6 | C | L2-J4-D-Ce1 | 10/03/10 | 82 | 4 | | | Southwest corner 2x2 |
| CE001 | 7 | C | L2-M13-D-Ce | 15/03/10 | 254 | 9 | | | Southwest corner 2x2 |
| CE001 | 8 | C | L2-N4-D-Ce1 | 17/03/10 | 24 | 1 | | | Southwest corner 2x2 |
| CE001 | 9 | C | L2-013-D-Ce1 | 18/03/10 | 56 | 3 | | | Southwest corner 2x2 |
| CE001 | 10 | C | L2-K7-D-Ce1 | 12/03/10 | 56 | 4 | | | Southwest corner 2x2 |
| CE001 | 11 | C | L2-M9-D-Ce1 | 15/03/10 | 62 | 3 | | | Southwest corner 2x2 |
| CE001 | 12 | C | L2-N8-D-Ce1 | 17/03/10 | 288 | 22 | | | Southwest corner 2x2 |
| CE001 | 13 | C | L2-L14-D-Ce1 | 15/03/10 | 252 | 8 | | | Southwest corner 2x2 |
| CE001 | 14 | C | L2-L8-D-Ce1 | 12/03/10 | 306 | 15 | | | Southwest corner 2x2 |
| CE001 | 15 | C | L2-Q15-D-Ce1 | 19/03/10 | 82 | 6 | | | Southwest corner 2x2 |
| CE001 | 16 | C | L2-N12-D-Ce1 | 18/03/10 | 28 | 3 | | | Southwest corner 2x2 |
| CE001 | 17 | C | L2-F6-D-Ce1 | 09/03/10 | 108 | 2 | | | Southwest corner 2x2 |
| CE001 | 18 | C | L2-L12-D-Ce1 | 15/03/10 | 138 | 6 | | | Southwest corner 2x2 |
| CE001 | 19 | C | L2-O15-D-Ce1 | 19/03/10 | 210 | 15 | | | Southwest corner 2x2 |
| CE001 | 20 | C | L2-K5-D-Ce1 | 12/03/10 | 87 | 7 | | | Southwest corner 2x2 |
| CE001 | 21 | C | L2-G5-D-Ce1 | 09/03/10 | 98 | 6 | | | Southwest corner 2x2 |
| CE001 | 22 | C | L2-Q11-D-Ce1 | 19/03/10 | 74 | 5 | | | Southwest corner 2x2 |
| CE001 | 23 | C | L2-N14-D-Ce1 | 18/03/10 | 172 | 7 | | | Southwest corner 2x2 |
| CE001 | 24 | C | L2-E7-D-Ce1 | 09/03/10 | 198 | 7 | | | Southwest corner 2x2 |
| CE001 | 25 | C | L2-L10-D-Ce1 | 17/03/10 | 1466 | 22 | | | Southwest corner 2x2 |
| CE001 | 26 | C | L2-F8-D-Ce1 | 09/03/10 | 312 | 12 | 14404 | 543 | Southwest corner 2x2 |
| CE001 | 27 | C | L2-K13-D-Ce1 | 11/03/10 | 236 | 14 | | | Southwest corner 2x2 |
| CE001 | 28 | C | L2-J14-D-Ce1 | 11/03/10 | 4 | 3 | | | Southwest corner 2x2 |
| CE001 | 29 | C | L2-J12-D-Ce1 | 10/03/10 | 296 | 12 | | | Southwest corner 2x2 |
| CE001 | 30 | C | L2-H8-D-Ce1 | 09/03/10 | 408 | 13 | | | Southwest corner 2x2 |
| CE001 | 31 | C | L2-J10-D-Ce1 | 10/03/10 | 132 | 3 | | | Southwest corner 2x2 |
| CE001 | 32 | C | L2-N10-D-Ce1 | 17/03/10 | 394 | 20 | | | Southwest corner 2x2 |
| CE001 | 33 | C | L2-N6-D-Ce1 | 17/03/10 | 168 | 4 | | | Southwest corner 2x2 |
| CE001 | 34 | C | L2-G9-D-Ce1 | 18/03/10 | 169 | 16 | | | Southwest corner 2x2 |
| CE001 | 35 | C | L2-M5-D-Ce1 | 26/03/10 | 170 | 10 | | | Southwest corner 2x2 |
| CE001 | 36 | C | L2-O11-D-Ce1 | 18/03/10 | 278 | 16 | | | Southwest corner 2x2 |
| CE001 | 37 | C | L2-O5-D-Ce1 | 18/03/10 | 88 | 3 | | | Southwest corner 2x2 |
| CE001 | 38 | C | L2-H6-D-Ce1 | 10/03/10 | 138 | 5 | | | Southwest corner 2x2 |
| CE001 | 39 | C | L2-G7-D-Ce1 | 09/03/10 | 1184 | 5 | | | Southwest corner 2x2 |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| CE001 | 40 | C | L2-P14-D-Ce1 | 19/03/10 | 342 | 9 | | | Southwest corner 2x2 |
| CE001 | 41 | C | L2-P8-D-Ce1 | 18/03/10 | 438 | 20 | | | Southwest corner 2x2 |
| CE001 | 42 | C | L2-09-D-Ce1 | 18/03/10 | 322 | 22 | | | Southwest corner 2x2 |
| CE001 | 43 | C | L2-K9-D-Ce1 | 11/03/10 | 502 | 23 | | | Southwest corner 2x2 |
| CE001 | 44 | C | L2-M7-D-Ce1 | 15/03/10 | 1416 | 37 | | | Southwest corner 2x2 |
| CE001 | 45 | C | L2-Q13-D-Ce1 | 19/03/10 | 216 | 10 | | | all sherds labeled S not D, but in SW corner |
| CE001 | 46 | C | L2-P10-D-Ce1 | 19/03/10 | 282 | 12 | | | Southwest corner 2x2 |
| CE001 | 47 | C | L2-K11-D-Ce1 | 12/03/10 | 508 | 8 | | | Southwest corner 2x2 |
| CE001 | 48 | C | L2-M11-D-Ce1 | 15/03/10 | 944 | 49 | | | Southwest corner 2x2 |
| CE001 | 49 | C | L2-E5-D-Ce1 | 08/03/10 | 446 | 8 | | | Southwest corner 2x2 |
| CE001 | 50 | C | L2-P12-D-Ce1 | 19/03/10 | 14 | 1 | | | Southwest corner 2x2 |
| CE001 | 51 | C | L2-07-D-Ce1 | 18/03/10 | 334 | 25 | | | Southwest corner 2x2 |
| CE002 | 52 | C | L2-K13-S-Ce1 | 11/03/10 | 2046 | 80 | | | All Diagnostic sherds from 50x50 |
| CE002 | 53 | C | L2-I5-S-Ce1 | 10/03/10 | 3234 | 54 | | | All Diagnostic sherds from 50x50 |
| CE002 | 54 | C | L2-I9-S-Ce1 | 10/03/10 | 2358 | 38 | | | All Diagnostic sherds from 50x50 |
| CE002 | 55 | C | L2-K9-S-Ce1 | 11/03/10 | 3200 | 79 | 19960 | 439 | All Diagnostic sherds from 50x50 |
| CE002 | 56 | C | L2-K13-S-Ce3 | 11/03/10 | 2150 | 59 | | | All Diagnostic sherds from 50x50 |
| CE002 | 57 | C | L2-K13-S-Ce2 | 11/03/10 | 2796 | 35 | | | All Diagnostic sherds from 50x50 |
| CE002 | 58 | C | L2-K13-S-Ce4 | 11/03/10 | 1648 | 52 | | | All Diagnostic sherds from 50x50 |
| CE002 | 59 | C | L2-K11-S-Ce1 | 11/03/10 | 2528 | 42 | | | All Diagnostic sherds from 50x50 |
| CE003 | 60 | C | L2-G7-S-Ce1 | 09/05/10 | 3456 | 42 | | | All Diagnostic sherds from 50x50 |
| CE003 | 61 | C | L2-H6-S-Ce2 | 09/03/10 | 36 | 1 | | | All Diagnostic sherds from 50x50 |
| CE003 | 62 | C | L2-G5-S-Ce1 | 09/03/10 | 2530 | 50 | | | All Diagnostic sherds from 50x50 (on Montículo) |
| CE003 | 63 | C | L2-L12-S-Ce1 | 12/03/10 | 1234 | 34 | | | All Diagnostic sherds from 50x50 |
| CE003 | 64 | C | L2-F10-S-Ce1 | 09/03/10 | 430 | 15 | 20404 | 340 | All Diagnostic sherds from 50x50 |
| CE003 | 65 | C | L2-E5-S-Ce1 | 08/03/10 | 2266 | 32 | | | All Diagnostic sherds from 50x50 |
| CE003 | 66 | C | L2-H6-S-Ce1 | 09/03/10 | 2500 | 62 | | | All Diagnostic sherds from 50x50 |
| CE003 | 67 | C | L2-H8-S-Ce1 | 09/03/10 | 1408 | 25 | | | All Diagnostic sherds from 50x50 |
| CE003 | 68 | C | L2-E7-S-Ce1 | 08/03/10 | 5014 | 77 | | | All Diagnostic sherds from 50x50 (fineline in bag) |
| CE003 | 69 | C | L2-M7-S-Ce2 | 15/03/10 | 1530 | 2 | | | All Diagnostic sherds from 50x50 |
| CE004 | 70 | C | L2-M7-S-Ce1 | 15/03/10 | 4036 | 65 | | | All Diagnostic sherds from 50x50 |
| CE004 | 71 | C | L2-M9-S-Ce1 | 15/03/10 | 4872 | 102 | | | All Diagnostic sherds from 50x50 |
| CE004 | 72 | C | L2-F6-S-Ce1 | 09/03/10 | 4686 | 81 | | | All Diagnostic sherds from 50x50 (on Montículo) |
| CE004 | 73 | C | L2-M11-S-Ce1 | 15/03/10 | 2870 | 69 | 22140 | 438 | All Diagnostic sherds from 50x50 |
| CE004 | 74 | C | L2-E7-S-Ce2 | 09/03/10 | 2804 | 60 | | | All Diagnostic sherds from 50x50 |
| CE004 | 75 | C | L2-J4-S-Ce1 | 10/03/10 | 1892 | 40 | | | All Diagnostic sherds from 50x50 |
| CE004 | 76 | C | L2-G9-S-Ce1 | 18/03/10 | 980 | 21 | | | All Diagnostic sherds from 50x50 |
| CE005 | 77 | C | L2-N6-S-Ce1 | 17/03/10 | 4600 | 26 | | | All Diagnostic sherds from 50x50 |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Fragments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| CE005 | 78 | C | L2-N6-S-Ce4 | 17/03/10 | 4506 | 43 | 15904 | 109 | All Diagnostic sherds from 50x50 |
| CE005 | 79 | C | L2-N6-S-Ce3 | 17/03/10 | 2876 | 14 | | | All Diagnostic sherds from 50x50 |
| CE005 | 80 | C | L2-N6-S-Ce2 | 17/03/10 | 3922 | 26 | | | All Diagnostic sherds from 50x50 |
| CE006 | 81 | C | L2-N10-S-Ce1 | 17/03/10 | 4028 | 97 | 21914 | 417 | All Diagnostic sherds from 50x50 |
| CE006 | 82 | C | L2-N8-S-Ce2 | 17/03/10 | 4728 | 74 | | | All Diagnostic sherds from 50x50 |
| CE006 | 83 | C | L2-Q7-S-Ce1 | 19/03/10 | 3888 | 71 | | | All Diagnostic sherds from 50x50 |
| CE006 | 84 | C | L2-O5-S-Ce1 | 18/03/10 | 2524 | 25 | | | All Diagnostic sherds from 50x50 |
| CE006 | 85 | C | L2-Q9-S-Ce1 | 19/03/10 | 592 | 16 | | | All Diagnostic sherds from 50x50 |
| CE006 | 86 | C | L2-Q11-S-Ce1 | 19/03/10 | 1720 | 39 | | | All Diagnostic sherds from 50x50 |
| CE006 | 87 | C | L2-I7-S-Ce1 | 09/03/10 | 886 | 19 | | | All Diagnostic sherds from 50x50 |
| CE006 | 88 | C | L2-O9-S-Ce1 | 18/03/10 | 2490 | 55 | | | All Diagnostic sherds from 50x50 |
| CE006 | 89 | C | L2-E9-S-Ce1 | 09/03/10 | 1058 | 21 | | | All Diagnostic sherds from 50x50 |
| CE007 | 90 | C | L2-M13-S-Ce1 | 15/03/10 | 3826 | 72 | 16396 | 204 | All Diagnostic sherds from 50x50 |
| CE007 | 91 | C | L2-N4-S-Ce1 | 17/03/10 | 2118 | 12 | | | All Diagnostic sherds from 50x50 |
| CE007 | 92 | C | L2-N8-S-Ce1 | 17/03/10 | 5624 | 70 | | | All Diagnostic sherds from 50x50 |
| CE007 | 93 | C | L2-M13-S-Ce2 | 15/03/10 | 4828 | 50 | | | All Diagnostic sherds from 50x50 |
| CE008 | 94 | C | L2-J12-S-Ce1 | 11/03/10 | 5692 | 112 | 17277 | 363 | All Diagnostic sherds from 50x50 |
| CE008 | 95 | C | L2-K5-S-Ce1 | 12/03/10 | 2552 | 50 | | | All Diagnostic sherds from 50x50 |
| CE008 | 96 | C | L2-J10-S-Ce1 | 10/03/10 | 2262 | 49 | | | All Diagnostic sherds from 50x50 |
| CE008 | 97 | C | L2-H10-S-Se1 | 09/03/10 | 2696 | 53 | | | All Diagnostic sherds from 50x50 |
| CE008 | 98 | C | L2-H10-S-Ce2 | 10/03/10 | 848 | 31 | | | All Diagnostic sherds from 50x50 |
| CE008 | 99 | C | L2-J6-S-Ce1 | 10/03/10 | 2377 | 52 | | | All Diagnostic sherds from 50x50 |
| CE008 | 100 | C | L2-K11-S-Ce2 | 12/03/10 | 850 | 16 | | | All Diagnostic sherds from 50x50 |
| CE009 | 101 | C | L2-P12-S-Ce1 | 19/03/10 | 2372 | 50 | 22920 | 569 | All Diagnostic sherds from 50x50 |
| CE009 | 102 | C | L2-P8-S-Ce1 | 18/03/10 | 4126 | 96 | | | All Diagnostic sherds from 50x50 |
| CE009 | 103 | C | L2-O13-S-Ce1 | 18/03/10 | 2770 | 87 | | | All Diagnostic sherds from 50x50 |
| CE009 | 104 | C | L2-P6-S-Ce1 | 18/03/10 | 1490 | 28 | | | All Diagnostic sherds from 50x50 |
| CE009 | 105 | C | L2-Q5-S-Ce1 | 19/03/10 | 150 | 5 | | | All Diagnostic sherds from 50x50 |
| CE009 | 106 | C | L2-Q13-S-Ce1 | 19/03/10 | 604 | 19 | | | All Diagnostic sherds from 50x50 (All sherds labeled D not S) |
| CE009 | 107 | C | L2-N14-S-Ce1 | 18/03/10 | 948 | 39 | | | All Diagnostic sherds from 50x50 |
| CE009 | 108 | C | L2-P10-S-Ce1 | 19/03/10 | 1152 | 43 | | | All Diagnostic sherds from 50x50 |
| CE009 | 109 | C | L2-Q7-D-Ce1 | 19/03/10 | 200 | 12 | | | All Diagnostic sherds from 50x50 |
| CE009 | 110 | C | L2-O7-S-Ce1 | 18/03/10 | 4432 | 82 | | | All Diagnostic sherds from 50x50 (All sherds labeled D not S) |
| CE009 | 111 | C | L2-P4-S-Ce1 | 18/03/10 | 36 | 2 | | | All Diagnostic sherds from 50x50 |
| CE009 | 112 | C | L2-O15-S-Ce1 | 19/03/10 | 206 | 9 | | | All Diagnostic sherds from 50x50 |
| CE009 | 113 | C | L2-P14-S-Ce1 | 19/03/10 | 186 | 5 | | | All Diagnostic sherds from 50x50 |
| CE009 | 114 | C | L2-N12-S-Ce1 | 18/03/10 | 2660 | 42 | | | All Diagnostic sherds from 50x50 |
| CE009 | 115 | C | L2-O11-S-Ce1 | 18/03/10 | 1226 | 38 | | | All Diagnostic sherds from 50x50 |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Fragments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| CE009 | 116 | C | L2-Q15-S-Ce1 | 19/03/10 | 362 | 12 | | | All Diagnostic sherds from 50x50 |
| CE010 | 117 | C | L2-M5-S-Ce1 | 26/03/10 | 3170 | 74 | | | All Diagnostic sherds from 50x50 |
| CE010 | 118 | C | L2-L12-S-Ce2 | 15/03/10 | 3312 | 94 | | | All Diagnostic sherds from 50x50 |
| CE010 | 119 | C | L2-L6-S-Ce1 | 12/03/10 | 2970 | 9 | | | All Diagnostic sherds from 50x50 |
| CE010 | 120 | C | L2-F8-S-Ce1 | 09/03/10 | 3900 | 61 | 17658 | 332 | All Diagnostic sherds from 50x50 |
| CE010 | 121 | C | L2-L14-S-Ce1 | 15/03/10 | 2260 | 70 | | | All Diagnostic sherds from 50x50 |
| CE010 | 122 | C | L2-L4-S-Ce2 | 12/03/10 | 838 | 4 | | | All Diagnostic sherds from 50x50 |
| CE010 | 123 | C | L2-L4-S-Ce1 | 12/03/10 | 794 | 18 | | | All Diagnostic sherds from 50x50 |
| CE010 | 124 | C | L2-J8-S-Ce2 | 10/03/10 | 414 | 2 | | | All Diagnostic sherds from 50x50 |
| CE011 | 125 | C | L2-L10-S-Ce1 | 12/03/10 | 5400 | 122 | | | All Diagnostic sherds from 50x50 |
| CE011 | 126 | C | L2-J12-S-Ce2 | 11/03/10 | 3476 | 77 | | | All Diagnostic sherds from 50x50 |
| CE011 | 127 | C | L2-L6-S-Ce2 | 12/03/10 | 2926 | 35 | | | All Diagnostic sherds from 50x50 |
| CE011 | 128 | C | L2-J8-S-Ce1 | 10/03/10 | 3140 | 66 | 19914 | 386 | All Diagnostic sherds from 50x50 |
| CE011 | 129 | C | L2-L8-S-Ce1 | 12/03/10 | 3990 | 62 | | | All Diagnostic sherds from 50x50 |
| CE011 | 130 | C | L2-K7-S-Ce1 | 12/03/10 | 670 | 15 | | | All Diagnostic sherds from 50x50 |
| CE011 | 131 | C | L2-J14-S-Ce1 | 14/03/10 | 312 | 9 | | | All Diagnostic sherds from 50x50 |
| CE012 | 132 | C | L2-U4-R4-N2-Ce1 | 21/05/10 | 870 | 10 | | | Platform in R4 |
| CE012 | 133 | C | L2-U4-N6-Ce1 | 24/05/10 | 776 | 7 | | | In the far west of unit, west of M3 |
| CE012 | 134 | C | L2-U4-N5P-Ce2 | 17/05/10 | 24 | 1 | | | Floor N5-5P, west of M2 |
| CE012 | 135 | C | L2-U4-N4-Ce7 | 12/05/10 | 334 | 11 | | | North extention north of M5 |
| CE012 | 136 | C | L2-U4-R3-N1-Ce2 | 12/05/10 | 28 | 1 | | | Paica N4 |
| CE012 | 137 | C | L2-U4-N4-Ce8 | 18/05/10 | 26 | 1 | | | Wall collapse (M2) |
| CE012 | 138 | C | L2-U4-N5C-Ce2 | 24/05/10 | 222 | 4 | | | |
| CE012 | 139 | C | L2-U4-N5-Ce2 | 17/05/10 | 204 | 4 | | | North extension south of M4 |
| CE012 | 140 | C | L2-U4-R3-N2-Ce1 | 12/05/10 | 10 | 1 | | | |
| CE012 | 141 | C | L2-U4-N5PR-Ce1 | 13/05/10 | 768 | 15 | | | Floor fill 5PR, east of  M2 |
| CE012 | 142 | C | L2-U4-N6-Ce2 | 25/05/10 | 988 | 20 | | | Dark mark, east of dark mark below M3 |
| CE012 | 143 | C | L2-U4-N5PR-Ce3 | 17/05/10 | 134 | 5 | | | West of M2 |
| CE012 | 144 | C | L2-U4-N4A-Ce2 | 12/05/10 | 78 | 4 | | | North extension |
| CE012 | 145 | C | L2-U3-N5-Ce7 | 26/04/10 | 4 | 1 | | | |
| CE012 | 146 | C | L2-U4-R4-N1-Ce3 | 28/05/10 | 46 | 5 | | | Inside chamber |
| CE012 | 147 | C | L2-U4-N4A-Ce3 | 28/05/10 | 954 | 13 | | | Above chamber- levels 3a, 4a, 5, 6 (hard pack) |
| CE012 | 148 | C | L2-U4-N5B-Ce1 | 20/05/10 | 6 | 1 | | | |
| CE012 | 149 | C | L2-U4-N5-Ce3 | 27/05/10 | 928 | 8 | | | M3 & bulk above the chamber |
| CE012 | 150 | C | L2-U4-N5A-Ce1 | 13/05/10 | 80 | 4 | 13587 | 282 | |
| CE012 | 151 | C | L2-U4-N3-Ce4 | 07/05/10 | 206 | 4 | | | North extension north of M5 |
| CE012 | 152 | C | L2-U4-R4-N3-Ce2 | 01/06/10 | 74 | 2 | | | Below adobe platform in sand, north side |
| CE012 | 153 | C | L2-U4-N6-Ce4 | 03/06/10 | 32 | 4 | | | On top of floor 7 |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| CE012 | 154 | C | L2-U4-N5PR-Ce4 | 18/05/10 | 80 | 4 | | | Fill of floor 5PR |
| CE012 | 155 | C | L2-U4-N1-Ce5 | 15/04/10 | 4 | 1 | | | Looter's hole 1 |
| CE012 | 156 | C | L2-U4-N5-P1 | 17/05/10 | 12 | 1 | | | |
| CE012 | 157 | C | L2-U4-N3-Ce3 | 07/05/10 | 192 | 5 | | | North extension south of M4 |
| CE012 | 158 | C | L2-U4-N6-Ce3 | 31/05/10 | 690 | 32 | | | East of the chamber (R4) |
| CE012 | 159 | C | L2-U4-N7-Ce1 | 03/06/10 | 782 | 10 | | | Under apisonado |
| CE012 | 160 | C | L2-U4-N5C-Ce1 | 21/05/10 | 1568 | 36 | | | |
| CE012 | 161 | C | L2-U4-R4-N1-Ce1 | 08/06/10 | 1024 | 11 | | | Inside chamber |
| CE012 | 162 | C | L2-U4-N2-Ce3 | 03/05/10 | 22 | 1 | | | North extreme inside wall (not north extension) |
| CE012 | 163 | C | L2-U4-R4-N3-Ce1 | 01/06/10 | 54 | 2 | | | South side below platform in sand |
| CE012 | 164 | C | L2-U4-N5B-Ce2 | 20/05/10 | 298 | 8 | | | Floor 5B |
| CE012 | 165 | C | L2-U4-R4-N1-Ce2 | 26/05/10 | 166 | 5 | | | |
| CE012 | 166 | C | L2-U4-N7-Ce2 | 03/06/10 | 226 | 5 | | | Burned area in eastern 1/2 of unit |
| CE012 | 167 | C | L2-U4-N2-Ce4 | 04/05/10 | 1512 | 30 | | | Northeast corner of unit, levels 1&2 of the north extension |
| CE012 | 168 | C | L2-U4-N3A-Ce4 | 07/05/10 | 165 | 5 | | | Hard pack of the north extension |
| CE013 | 169 | C | L2-U5-N2-Ce2 | 25/05/10 | 140 | 5 | | | Chamber 3 |
| CE013 | 170 | C | L2-U5-N1-Ce1 | 19/05/10 | 1242 | 47 | | | |
| CE013 | 171 | C | L2-U5-N1-Ce9 | 25/05/10 | 1218 | 34 | | | Huaca B access |
| CE013 | 172 | C | L2-U5-N1-Ce5 | 24/05/10 | 1916 | 30 | | | Huaca B access |
| CE013 | 173 | C | L2-U5-N2-Ce1 | 24/05/10 | 530 | 33 | | | Chamber 4 |
| CE013 | 174 | C | L2-U5-N1-Ce3 | 20/05/10 | 430 | 9 | | | Chamber 4 |
| CE013 | 175 | C | L2-U5-N1-Ce12 | 27/05/10 | 268 | 9 | | | Huaca B access |
| CE013 | 176 | C | L2-U5-N1-Ce2 | 20/05/10 | 246 | 9 | 11518 | 290 | |
| CE013 | 177 | C | L2-U5-N1-Ce6 | 24/05/10 | 1966 | 1 | | | Huaca B access |
| CE013 | 178 | C | L2-U5-N1-Ce8 | 25/05/10 | 324 | 14 | | | |
| CE013 | 179 | C | L2-U5-N2-V1-Ce1 | 26/05/10 | 22 | 1 | | | Contents of vessel found in Chamber 5 |
| CE013 | 180 | C | L2-U5-N1-Ce13 | 28/05/10 | 10 | 2 | | | |
| CE013 | 181 | C | L2-U5-N1-Ce4 | 21/05/10 | 1374 | 54 | | | Chamber 4 |
| CE013 | 182 | C | L2-U5-N1-Ce11 | 25/05/10 | 464 | 14 | | | Huaca B access |
| CE013 | 183 | C | L2-U5-N1-Ce7 | 21/05/10 | 1368 | 28 | | | Huaca B access |
| CE014 | 184 | C | L2-U3-N2-Ce2 | 27/04/10 | 62 | 3 | | | |
| CE014 | 185 | C | L2-U3-N1-Ce13 | 12/04/10 | 916 | 47 | | | South half of unit |
| CE014 | 186 | C | L2-U3-N2-Ce1 | 21/04/10 | 428 | 30 | | | |
| CE014 | 187 | C | L2-U3-N5-Ce1 | 23/04/10 | 462 | 15 | | | |
| CE014 | 188 | C | L2-U3-N1-Ce14 | 13/04/10 | 776 | 29 | | | |
| CE014 | 189 | C | L2-U3-N1-A1-Ce1 | 06/04/10 | 574 | 27 | | | Room 1 (ambiente 1) |
| CE014 | 190 | C | L2-U3-N3A-Ce3 | 03/05/10 | 152 | 3 | | | |
| CE014 | 191 | C | L2-U3-N1-Ce15 | 21/04/10 | 212 | 14 | | | |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| CE014 | 192 | C | L2-U3-N1-Ce12 | 12/04/10 | 2530 | 76 | | | South half of unit |
| CE014 | 193 | C | L2-U3-R1-N1-Ce1 | 12/04/10 | 572 | 20 | | | Inside of the paica (R1) |
| CE014 | 194 | C | L2-U3-N3-Ce5 | 20/04/10 | 624 | 27 | 18692 | 722 | |
| CE014 | 195 | C | L2-U3-N1-Ce8 | 09/04/10 | 2552 | 122 | | | South half of unit |
| CE014 | 196 | C | L2-U3-N5-Ce6 | 26/04/10 | 184 | 11 | | | |
| CE014 | 197 | C | L2-U3-N1-Ce17 | 03/05/10 | 216 | 13 | | | Looter's hole |
| CE014 | 198 | C | L2-U3-N3-Ce2 | 21/04/10 | 388 | 13 | | | |
| CE014 | 199 | C | L2-U3-N1-Ce6 | 08/04/10 | 268 | 11 | | | Looter's hole 3 |
| CE014 | 200 | C | L2-U3-N1-Ce15 | 28/04/10 | 684 | 19 | | | Looter's hole |
| CE014 | 201 | C | L2-U3-N1-Ce5 | 07/04/10 | 2934 | 106 | | | |
| CE014 | 202 | C | L2-U3-N1-Ce11 | 12/04/10 | 1310 | 44 | | | Looter's hole |
| CE014 | 203 | C | L2-U3-N1-Ce4 | 06/04/10 | 56 | 5 | | | Looter's hole 2 |
| CE014 | 204 | C | L2-U3-N1-Ce7 | 08/04/10 | 2792 | 87 | | | Rubble |
| CE015 | 205 | C | L2-U3-N3C-Ce3 | 04/05/10 | 2072 | 84 | | | |
| CE015 | 206 | C | L2-U1-N3-Ce3 | 22/03/10 | 154 | 5 | | | North façade |
| CE015 | 207 | C | L2-U3-N3E-Ce2 | 07/05/10 | 2306 | 82 | | | |
| CE015 | 208 | C | L2-U1-N3-Ce4 | 30/03/10 | 18 | 1 | | | Rubble from level 3 above floor 4B |
| CE015 | 209 | C | L2-U3-N3E-A1-Ce1 | 07/05/10 | 436 | 18 | | | |
| CE015 | 210 | C | L2-U3-N5-Ce9 | 11/05/10 | 1156 | 51 | | | |
| CE015 | 211 | C | L2-U3-N5-Ce2 | 23/04/10 | 1422 | 7 | | | Northwest corner |
| CE015 | 212 | C | L2-U1-N2-Ce1 | 12/03/10 | 410 | 13 | | | Extreme north of the west façade |
| CE015 | 213 | C | L2-U3-N3E-A2-Ce1 | 07/05/10 | 702 | 23 | | | |
| CE015 | 214 | C | L2-U3-S-Ce1 | 05/04/10 | 2028 | 12 | | | Surface |
| CE015 | 215 | C | L2-U1-N2-R2-Ce1 | 10/03/10 | 12 | 1 | | | Inside feature (rasgo) 2, upper level |
| CE015 | 216 | C | L2-U3-N5-Ce8 | 10/05/10 | 2580 | 86 | | | |
| CE015 | 217 | C | L2-U3-N5B-Ce1 | 12/05/10 | 2234 | 106 | | | Inside post hole 1 |
| CE015 | 218 | C | L2-U1-N1-Ce6 | 26/03/10 | 30 | 6 | | | Rubble east extension, north façade |
| CE015 | 219 | C | L2-U3-N1-V1 | 12/04/10 | 4 | 1 | | | Looter's hole 5 |
| CE015 | 220 | C | L2-U3-N1-V2 | 12/04/10 | 10 | 4 | | | Looter's hole on southern perimeter |
| CE015 | 221 | C | L2-U1-N1-Ce3 | 09/03/10 | 266 | 12 | | | |
| CE015 | 222 | C | L2-U3-N7-Ce5 | 20/05/10 | 138 | 2 | | | Inside jar in level 7 |
| CE015 | 223 | C | L2-U1-S-Ce1 | 02/06/10 | 14 | 1 | | | North façade |
| CE015 | 224 | C | L2-U1-N1-Ce2 | 08/03/10 | 228 | 8 | 18270 | 590 | Rubble from hole 1C, northwest corner of Huaca A |
| CE015 | 225 | C | L2-U3-N3E-A1-Ce2 | 10/05/10 | 302 | 8 | | | |
| CE015 | 226 | C | L2-U3-N3E-Ce1 | 06/04/10 | 52 | 1 | | | |
| CE015 | 227 | C | L2-U3-N7-Ce3 | 18/05/10 | 8 | 1 | | | |
| CE015 | 228 | C | L2-U3-N4-Ce1 | 10/05/10 | 130 | 5 | | | |
| CE015 | 229 | C | L2-U3-N3D-Ce1 | 06/04/10 | 292 | 5 | | | |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| CE015 | 230 | C | L2-U3-N3C-Ce2 | 04/05/10 | 168 | 2 | | | |
| CE015 | 231 | C | L2-U3-N3D-R1-Ce1 | 07/05/10 | 56 | 2 | | | Firepit level 3D |
| CE015 | 232 | C | L2-U3-N3E-A2-Ce2 | 10/05/10 | 26 | 2 | | | |
| CE015 | 233 | C | L2-U1-N1-Ce1 | 08/03/10 | 206 | 9 | | | Rubble from hole 1A west façade |
| CE015 | 234 | C | L2-U1-N2-R2-Ce1 | 09/03/10 | 14 | 1 | | | |
| CE015 | 235 | C | L2-U3-N4-R4-Ce1 | 10/05/10 | 40 | 1 | | | |
| CE015 | 236 | C | L2-U1-N2-R2-Ce2 | 17/06/10 | 298 | 12 | | | Between 50 cm and 1 meter from the surface of level 2 |
| CE015 | 237 | C | L2-U1-N2-Ce2 | 18/03/10 | 18 | 1 | | | Between the rubble of west façade hole 1A |
| CE015 | 238 | C | L2-U1-N3-Ce2 | 22/03/10 | 42 | 1 | | | West façade |
| CE015 | 239 | C | L2-U3-N4-A1-Ce1 | 10/05/10 | 46 | 5 | | | |
| CE015 | 240 | C | L2-U1-N3-R3-Ce1 | 22/03/10 | 12 | 2 | | | Looter's hole |
| CE015 | 241 | C | L2-U1-N3-Ce1 | 15/03/10 | 74 | 2 | | | |
| CE015 | 242 | C | L2-U1-N1-Ce4 | 10/03/10 | 178 | 5 | | | Rubble |
| CE015 | 243 | C | L2-U1-RAT1O-Ce1 | 02/06/10 | 28 | 1 | | | RAT- building 1 |
| CE015 | 244 | C | L2-U1-RAT2-Ce1 | 02/06/10 | 60 | 1 | | | RAT- north façade building 2 |
| CE016 | 245 | C | L2-U4-N3A-Ce2 | 22/04/10 | 78 | 4 | | | Hard clay adobe under R1 |
| CE016 | 246 | C | L2-U4-N1-Ce6 | 29/04/10 | 954 | 16 | | | North extension |
| CE016 | 247 | C | L2-U4-N1-Ce3 | 15/04/10 | 880 | 26 | | | |
| CE016 | 248 | C | L2-U4-N4A-Ce1 | 30/04/10 | 356 | 16 | | | Under 3A west extreme of unit |
| CE016 | 249 | C | L2-U4-N1-Ce2 | 14/04/10 | 2542 | 57 | | | |
| CE016 | 250 | C | L2-U4-N4-Ce1 | 23/04/10 | 668 | 7 | | | |
| CE016 | 251 | C | L2-U4-N3A-Ce3 | 03/05/10 | 232 | 10 | | | Against M1 |
| CE016 | 252 | C | L2-U4-N3-Ce2 | 21/04/10 | 212 | 8 | | | East 1/2 of unit |
| CE016 | 253 | C | L2-U4-N3A-Ce1 | 21/04/10 | 396 | 10 | | | |
| CE016 | 254 | C | L2-U4-N4-Ce2 | 26/04/10 | 2898 | 27 | | | East side of adobe checker board pattern |
| CE016 | 255 | C | L2-U4-N2-Ce1 | 16/04/10 | 1606 | 50 | | | |
| CE016 | 256 | C | L2-U4-N2-Ce2 | 19/04/10 | 444 | 19 | | | |
| CE016 | 257 | C | L2-U4-N7-Ce3 | 04/06/10 | 408 | 10 | 19852 | 480 | Level of ash, east extreme |
| CE016 | 258 | C | L2-U4-N1-Ce4 | 15/04/10 | 494 | 17 | | | Looter's hole 1 |
| CE016 | 259 | C | L2-U4-N4-Ce5 | 29/04/10 | 510 | 13 | | | West of M2 |
| CE016 | 260 | C | L2-U4-N4-Ce4 | 28/04/10 | 900 | 23 | | | east side of mid wall |
| CE016 | 261 | C | L2-U4-N2-Ce5 | 04/05/10 | 746 | 27 | | | North extension south of M4 |
| CE016 | 262 | C | L2-U4-N4-Ce6 | 11/05/10 | 406 | 9 | | | North extension southwest of M4 |
| CE016 | 263 | C | L2-U4-N3-Ce1 | 20/04/10 | 934 | 26 | | | Under rasgo 1-very hard clay/adobe mix |
| CE016 | 264 | C | L2-U4-N1-Ce7 | 30/04/10 | 1332 | 53 | | | North extension |
| CE016 | 265 | C | L2-U4-N5-Ce1 | 03/05/10 | 1852 | 17 | | | Extreme west between M1 & M3 |
| CE016 | 266 | C | L2-U4-N1-Ce1 | 13/04/10 | 274 | 13 | | | Surface rubble |
| CE016 | 267 | C | L2-U4-N4-Ce3 | 27/04/10 | 422 | 11 | | | East side |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Fragments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| CE016 | 268 | C | L2-U4-R3-N1-Ce1 | 11/05/10 | 198 | 5 | | | Northeast corner paica level 4 |
| CE016 | 269 | C | L2-U4-N3-Ce5 | 11/05/10 | 110 | 6 | | | ext N de esq NE al N de M5 |
| CE017 | 270 | C | L2-U3-CN-N2-Ce1* | 22/04/10 | 6 | 1 | | | Polychrome sherd, possibly Wari Costeño |
| CE017 | 271 | C | L2-U3-N1-Ce9 | 09/04/10 | 634 | 34 | | | South half of unit |
| CE017 | 272 | C | L2-U3-N5-Ce4 | 26/04/10 | 852 | 30 | | | |
| CE017 | 273 | C | L2-U3-N3A-Ce1 | 29/04/10 | 644 | 22 | | | |
| CE017 | 274 | C | L2-U3-N2-Ce3 | 28/04/10 | 1252 | 28 | | | |
| CE017 | 275 | C | L2-U3-N1-Ce3 | 06/04/10 | 2454 | 84 | | | Looter's hole 2 |
| CE017 | 276 | C | L2-U3-N3-Ce1 | 21/04/10 | 374 | 20 | | | |
| CE017 | 277 | C | L2-U3-N2A-Ce1 | 29/04/10 | 336 | 20 | | | |
| CE017 | 278 | C | L2-U3-N1-Ce2 | 06/04/10 | 426 | 7 | | | Looter's hole 3 |
| CE017 | 279 | C | L2-U3-N3-Ce4 | 22/04/10 | 314 | 1 | | | |
| CE017 | 280 | C | L2-U3-N3-Ce3 | 21/04/10 | 846 | 45 | | | |
| CE017 | 281 | C | L2-U3-N1-Ce10 | 09/04/10 | 278 | 5 | 15318 | 1010 | Rubbler next to the canal |
| CE017 | 282 | C | L2-U3-CN-N3-Ce1 | 23/04/10 | 190 | 13 | | | Canal level 3 |
| CE017 | 283 | C | L2-U3-N5-Ce3 | 26/04/10 | 1006 | 24 | | | |
| CE017 | 284 | C | L2-U3-CN-N2-Ce3 | 23/04/10 | 122 | 7 | | | Canal level 2 |
| CE017 | 285 | C | L2-U3-N3B-C1 | 30/04/10 | 18 | 1 | | | |
| CE017 | 286 | C | L2-U3-N7-Ce1 | 27/04/10 | 1746 | 61 | | | |
| CE017 | 287 | C | L2-U3-N3A-Ce2 | 30/04/10 | 506 | 18 | | | |
| CE017 | 288 | C | L2-U3-N5-Ce5 | 26/04/10 | 58 | 3 | | | |
| CE017 | 289 | C | L2-U3-N3C-Ce1 | 03/05/10 | 2278 | 86 | | | |
| CE017 | 290 | C | L2-U3-N1-Ce16 | 29/04/10 | 238 | 5 | | | Looter's hole |
| CE017 | 291 | C | L2-U3-N3B-Ce1* | 28/04/10 | 16 | 1 | | | |
| CE017 | 292 | C | L2-U3-CN-N2-Ce2 | 22/04/10 | 538 | 10 | | | |
| CE017 | 293 | C | L2-U3-N6-R3-Ce1 | 27/04/10 | 186 | 4 | | | Indside vessel |
| CE018 | 294 | C | L2-U2-N2B-Ce3 | 12/04/10 | 138 | 1 | | | Wall Fall |
| CE018 | 295 | C | L2-U2-Next1-N1-Ce1 | 30/03/10 | 606 | 17 | | | First level of north extention- rubble |
| CE018 | 296 | C | L2-U2-N2-Ce4 | 07/05/10 | 24 | 1 | | | East extension southern half. Base of a cup |
| CE018 | 297 | C | L2-U2-Next1-N1-Ce2 | 31/03/10 | 1702 | 43 | | | |
| CE018 | 298 | C | L2-U2-N3-Ce4 | 10/05/10 | 446 | 12 | | | East extension west half |
| CE018 | 299 | C | L2-U2-Sext1-N1-Ce1 | 31/03/10 | 78 | 8 | | | |
| CE018 | 300 | C | L2-U2-Sext1-N3-Ce1 | 05/04/10 | 132 | 5 | | | |
| CE018 | 301 | C | L2-U2-N1-Ce2 | 23/03/10 | 436 | 33 | | | Escombros |
| CE018 | 302 | C | L2-U2-N4E-Ce4 | 14/05/10 | 66 | 2 | | | Sand from the test pit |
| CE018 | 303 | C | L2-U2-N2B-Ce2 | 29/03/10 | 532 | 23 | | | Sand from looter's pit |
| CE018 | 304 | C | L2-U2-N2-Ce2 | 06/05/10 | 274 | 10 | | | East Extension- north half |
| CE018 | 305 | C | L2-U2-N2-P1 | 07/05/10 | 6 | 1 | | | East extension- south half |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| CE018 | 306 | C | L2-U2-N1-Ce3 | 24/03/10 | 642 | 29 | | | West half |
| CE018 | 307 | C | L2-U2-N2B-Ce1 | 25/03/10 | 566 | 35 | | | Sand from looter's pit |
| CE018 | 308 | C | L2-U2-Next1-N2-Ce1 | 31/03/10 | 38 | 4 | | | |
| CE018 | 309 | C | L2-U2-N4E-Ce2 | 11/05/10 | 86 | 6 | | | East extension pozo de huaquero north side |
| CE018 | 310 | C | L2-U2-N3-Ce1 | 06/05/10 | 520 | 33 | | | East extension north half |
| CE018 | 311 | C | L2-U2-N3-Ce3 | 10/05/10 | 96 | 5 | | | East extension west half upper slope, above floor |
| CE018 | 312 | C | L2-U2-N1-Ce6 | 06/05/10 | 424 | 23 | 11170 | 472 | East extension south half |
| CE018 | 313 | C | L2-U2-N1-Ce4 | 05/05/10 | 530 | 19 | | | East extension |
| CE018 | 314 | C | L2-U2-N2-Ce3 | 07/05/10 | 858 | 36 | | | East extension south half |
| CE018 | 315 | C | L2-U2-N7-Sext-Ce1 | 14/05/10 | 122 | 2 | | | |
| CE018 | 316 | C | L2-U2-N6E-Ce1 | 17/05/10 | 12 | 1 | | | Test pit |
| CE018 | 317 | C | L2-U2-N3-P1 | 06/05/10 | 4 | 1 | | | East extension north half |
| CE018 | 318 | C | L2-U2-N3-Ce2 | 07/05/10 | 326 | 12 | | | East extension south half |
| CE018 | 319 | C | L2-U2-N4E-Ce1 | 11/05/10 | 72 | 4 | | | East extension pozo de huaquero south side |
| CE018 | 320 | C | L2-U2-N2-Ce1 | 05/05/10 | 630 | 44 | | | East extension |
| CE018 | 321 | C | L2-U2-N9-Sext-Ce1 | 18/05/10 | 58 | 2 | | | |
| CE018 | 322 | C | L2-U2-N7E-Ce1 | 18/05/10 | 36 | 3 | | | Test pit |
| CE018 | 323 | C | L2-U2-N1-Ce7 | 07/05/10 | 306 | 11 | | | East extension south half |
| CE018 | 324 | C | L2-U2-N4E-Ce3 | 14/05/10 | 104 | 2 | | | |
| CE018 | 325 | C | L2-U2-Next1-N1-Pi1 | 30/03/10 | 12 | 1 | | | In rubble |
| CE018 | 326 | C | L2-U2-N1-Ce5 | 06/05/10 | 336 | 1 | | | East half south extension. 1 fragment, the others found on 5/5/10 |
| CE018 | 327 | C | L2-U2-Next1-N1-Ce3 | 31/03/10 | 170 | 5 | | | In rubble, cup fragments? |
| CE018 | 328 | C | L2-U2-N4-Ce1 | 07/04/10 | 230 | 14 | | | |
| CE018 | 329 | C | L2-U2-N3-Ce5 | 10/05/10 | 182 | 10 | | | East half east extension lower slope no arch |
| CE018 | 330 | C | L2-U2-Sext1-N4-Ce1 | 05/04/10 | 76 | 3 | | | |
| CE018 | 331 | C | L2-U2-N2A-Ce1 | 29/03/10 | 294 | 10 | | | |
| CE019 | 332 | C | L2-U3-N1-Ce1 | 05/04/10 | 2394 | 85 | | | Looter's hole |
| CE019 | 333 | C | L2-U3-N7-Ce2 | 18/05/10 | 3240 | 151 | | | |
| CE019 | 334 | C | L2-U3-N6-Ce1 | 17/05/10 | 274 | 12 | | | On top of floor |
| CE019 | 335 | C | L2-U3-N7-Ce7 | 19/05/10 | 466 | 25 | | | |
| CE019 | 336 | C | L2-U3-S-Ce3 | 14/05/10 | 18 | 1 | | | |
| CE019 | 337 | C | L2-U3-N7-Fg1-Ce1 | 19/05/10 | 76 | 2 | | | |
| CE019 | 338 | C | L2-U3-N7-Ce6 | 20/05/10 | 450 | 8 | | | Inside jar in level 7 |
| CE019 | 339 | C | L2-U3-N5C-Ce2 | 14/05/10 | 844 | 28 | | | |
| CE019 | 340 | C | L2-U3-N5C-T1-Ce1 | 13/05/10 | 254 | 11 | | | Tomb 1(Unit 3) |
| CE019 | 341 | C | L2-U3-N7-Ce2 | 14/05/10 | 356 | 24 | 11704 | 380 | |
| CE019 | 342 | C | L2-U3-N7-Ce4 | 18/05/10 | 34 | 1 | | | |
| CE019 | 343 | C | L2-U3-N5D-Ce1 | 14/05/10 | 10 | 3 | | | |
| CE019 | 344 | C | L2-U5-N2-Ce3 | 25/05/10 | 2676 | 1 | | | Chamber 5 |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Fragments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| CE019 | 345 | C | L2-U3-N5C-Ce1 | 13/05/10 | 228 | 17 | | | |
| CE019 | 346 | C | L2-U3-S-Ce2 | 21/04/10 | 10 | 1 | | | |
| CE019 | 347 | C | L2-U3-N2-P1 | 21/04/10 | 4 | 1 | | | |
| CE019 | 348 | C | L2-U3-N1-P2 | 18/06/10 | 6 | 1 | | | |
| CE019 | 349 | C | L2-U3-N6-P3 | 18/06/10 | 10 | 2 | | | |
| CE019 | 350 | C | L2-U3-N5B-V1 | 18/06/10 | 2 | 1 | | | |
| CE019 | 351 | C | L2-U1-S-Ce2 | 18/06/10 | 352 | 5 | | | |
| CE020 | 352 | C | L2-U2-Sext1-N10-T1-Ct3 | 26/05/10 | 6 | 4 | 4018 | 5 | 4 beads from burial |
| CE020 | 353 | C | L2-U3-N7-Ce7 | 20/05/10 | 4012 | 1 | | | Next to firepit in level 7 |
| CE021 | 354 | C | L2-U3-N6-R3-Ce2 | 27/04/10 | 4918 | 1 | 4918 | 1 | Incomplete pot |
| CE022 | 355 | C | L2-U2-N1-R1-Ce1 | 31/03/10 | 3228 | 7 | 13852 | 16 | 9148412.279, 692605.043 D:154.261 (jar "#54") |
| CE022 | 356 | C | L2-U2-N1-R1-Ce2 | 31/03/10 | 3916 | 5 | | | 9148412.279, 692605.043 D:154.261 (jar "#54") |
| CE022 | 357 | C | L2-U2-Sext-N10-T1-Ce1* | 19/05/10 | 3742 | 3 | | | On top pf body (basin) |
| CE022 | 358 | C | L2-U2-Sext1-N3-Ce2 | 05/04/10 | 2966 | 1 | | | Part of the offering over tomb 1 (rasgo 1) |
| CE023 | 359 | C | L2-U5-N1-Ce10* | 25/05/10 | 280 | 1 | 574 | 2 | looted burial at the access of Huaca B-double-spout and bridge |
| CE023 | 360 | C | L2-U2-N1-Ce1* | 23/03/10 | 294 | 1 | | | In the fill- The goblet |
| CE024 | 361 | C | L2-N14-SCe3 | 07/06/10 | 126 | 22 | 1674 | 76 | Little broken vessels |
| CE024 | 362 | C | L2-M13-S-Ce3 | 08/06/10 | 310 | 3 | | | 3 ceramic sherds tagged 18-6-10 aac |
| CE024 | 363 | C | L2-J12-S-Ce3 | 13/04/10 | 30 | 1 | | | Ceramic sherd tagged 18-6-10 aac |
| CE024 | 364 | C | L2-I12-S-Ce1 | 11/03/10 | 12 | 2 | | | 2 painted sherds |
| CE024 | 365 | C | L2-N14-S-Ce2 | 05/04/10 | 70 | 6 | | | 5 ceramic sherds tagged 18-6-10 aac |
| CE024 | 366 | C | L2-U4-R4-N3-Ce3 | 31/05/10 | 308 | 1 | | | |
| CE024 | 367 | C | L2-K12-S-Ce1 | 11/03/10 | 66 | 1 | | | Molded ceramic tagged 18-6-10 aac |
| CE024 | 368 | C | L2-N8-S-Ce3 | 08/06/10 | 448 | 21 | | | 21 ceramic sherds collected left of n8 |
| CE024 | 369 | C | L2-S1-S-Ce1 | 3/12/10 | 44 | 1 | | | Molded ceramic sherd tagged 18-6-10 aac |
| CE024 | 370 | C | L2-P12-S-Ce2 | 3/12/10 | 4 | 1 | | | Painted ceramic sherd tagged 18-6-10 aac |
| CE024 | 371 | C | L2-U7-S-Ce1 | 3/12/10 | 6 | 1 | | | |
| CE024 | 372 | C | L2-J13-S-Ce1 | 3/11/10 | 14 | 1 | | | Painted ceramic sherd tagged 18-6-10 aac |
| CE024 | 373 | C | L2-N12-S-Ce2 | 3/9/10 | 18 | 1 | | | Painted ceramic sherd tagged 18-6-10 aac |
| CE024 | 374 | C | L2-P10-S-Ce2 | 3/12/10 | 4 | 1 | | | Painted ceramic sherd tagged 18-6-10 aac |
| CE024 | 375 | C | L2-K9-S-Ce2 | 12/03/10 | 82 | 1 | | | Tagged 18-6-10 aac |
| CE024 | 376 | C | L2-M12-S-Ce1 | 09/03/10 | 52 | 3 | | | 3 ceramic sherds |
| CE024 | 377 | C | L2-G7-S-Ce2 | 09/03/10 | 24 | 1 | | | Molded ceramic tagged 18-6-10 aac |
| CE024 | 378 | C | L2-T5-S-Ce1 | 12/03/10 | 6 | 1 | | | Painted ceramic sherd tagged 18-6-10 aac |
| CE024 | 379 | C | L2-K11-S-Ce3 | 26/03/10 | 40 | 6 | | | 6 ceramic sherds |
| CE024 | 380 | C | L2-L10-S-Ce2 | 09/03/10 | 10 | 1 | | | Molded ceramic, tagged 18-6-10 aac |
| LiC001 | 1 | Li | L2-U1-N2-R1-L1 | 18/03/10 | 18 | 1 | | | Rubble- rasgo 1 |
| LiC001 | 2 | Li | L2-U1-N2-R2-L1 | 09/03/10 | 14 | 1 | | | From inside large cut in hard matrix |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| LiC001 | 3 | Li | L2-U2-N5B-Li1 | 13/04/10 | 168 | 1 | | | Under floor 5A in wall of 5B |
| LiC001 | 4 | Li | L2-U2-N4E-Li1 | 14/05/10 | 10 | 1 | | | Sand from test pit |
| LiC001 | 5 | Li | L2-U5-N1-Li1 | 26/05/10 | 44 | 1 | | | |
| LiC001 | 6 | Li | L2-U2-SEXT1-N10-T1-CT | 21/05/10 | 28 | 114 | | | South extension- around neck of skeleton |
| LiC001 | 7 | Li | L2-U2-SEXT1-N10-T1-CT | 19/05/10 | 12 | 13 | | | Close to the left hand of the body |
| LiC001 | 8 | Li | L2-U2-NS-Ct1 | 08/04/10 | 6 | 3 | | | Found on surface to north of U2 |
| LiC001 | 9 | Li | L2-U3-S-Li1 | 05/04/10 | 6 | 1 | | | Surface |
| LiC001 | 10 | Li | L2-U3-N3E-Li1 | 07/05/10 | 84 | 2 | | | |
| LiC001 | 11 | Li | L2-U3-N5-Li2 | 11/05/10 | 20 | 1 | | | |
| LiC001 | 12 | Li | L2-U3-N3C-Li1 | 03/05/10 | 64 | 2 | | | |
| LiC001 | 13 | Li | L2-U3-CN-N2-Li1 | 23/04/10 | 12 | 1 | | | Canal level 2 |
| LiC001 | 14 | Li | L2-U3-N3E-A1-Li1 | 07/05/10 | 34 | 1 | | | |
| LiC001 | 15 | Li | L2-U3-N5C-Li1 | 14/05/10 | 12 | 1 | | | |
| LiC001 | 16 | Li | L2-U3-N7-Li2 | 18/05/10 | 10 | 2 | 5389 | 168 | |
| LiC001 | 17 | Li | L2-U3-N3C-Li3 | 04/05/10 | 32 | 1 | | | |
| LiC001 | 18 | Li | L2-U3-N1-Li3 | 08/04/10 | 34 | 1 | | | |
| LiC001 | 19 | Li | L2-U3-N7-Li3 | 18/05/10 | 1738 | 4 | | | |
| LiC001 | 20 | Li | L2-U3-N3A-Li1 | 30/04/10 | 258 | 1 | | | |
| LiC001 | 21 | Li | L2-U3-N7-Li1 | 27/04/10 | 10 | 1 | | | |
| LiC001 | 22 | Li | L2-U3-N3C-Li2 | 04/05/10 | 112 | 1 | | | |
| LiC001 | 23 | Li | L2-U3-N1-Li1 | 05/04/10 | 136 | 1 | | | |
| LiC001 | 24 | Li | L2-U3-N5-Li1 | 23/04/10 | 52 | 1 | | | |
| LiC001 | 25 | Li | L2-U3-N1-Li2 | 09/04/10 | 2224 | 1 | | | Rubble next to canal |
| LiC001 | 26 | Li | L2-U3-N1-A1-Li1 | 07/04/10 | 22 | 1 | | | Rubble |
| LiC001 | 27 | Li | L2-U3-N1-Li4 | 12/04/10 | 98 | 4 | | | South half of the unit |
| LiC001 | 28 | Li | L2-U4-N2-Li1 | 04/05/10 | 16 | 1 | | | North extension south of M4 |
| LiC001 | 29 | Li | L2-U4-N1-Li1 | 14/04/10 | 38 | 1 | | | |
| LiC001 | 30 | Li | L2-U4-N4-Li1 | 23/04/10 | 32 | 1 | | | |
| LiC001 | 31 | Li | L2-U4-N4-Li2 | 28/04/10 | 8 | 1 | | | East side of M2 |
| LiC001 | 32 | Li | L2-U5-N1-Li1 | 26/05/10 | 37 | 1 | | | Huaca B access |
| MAC001 | 1 | Ma | L2-U1-N3-Ma1 | 15/03/10 | 5 | 1 | | | |
| MAC001 | 2 | Ma | L2-U1-N1-Ma2 | 09/03/10 | 50 | 11 | | | Rubble on top of rasgo 2 |
| MAC001 | 3 | Ma | L2-U1-N2-Ma3 | 15/03/10 | 8 | 1 | | | |
| MAC001 | 4 | Ma | L2-U1-N2-Ma1 | 09/03/10 | 38 | 26 | | | sobre nivel 2 |
| MAC001 | 5 | Ma | L2-U1-N1-Ma1 | 08/03/10 | 8 | 5 | | | Hole 1A west façade |
| MAC001 | 6 | Ma | L2-U1-N3-Ma1 | 30/03/10 | 16 | 19 | | | Rubble over floor 4B |
| MAC001 | 7 | Ma | L2-U1-N2-Ma2 | 08/06/10 | 12 | 3 | | | Extreme north |
| MAC001 | 8 | Ma | L2-U1-N1-Ma2 | 18/03/10 | 24 | 19 | | | Rubble over north façade |
| MAC001 | 9 | Ma | L2-U1-N3-Ma3 | 22/03/10 | 8 | 1 | | | West façade |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| MAC001 | 10 | Ma | L2-U1-N3-R3-Ma2 | 26/03/10 | 86 | 63 | | | Matrix of rasgo 3 |
| MAC001 | 11 | Ma | L2-U1-N3-R3-Ma1 | 22/03/10 | 34 | 15 | | | Looter's hole |
| MAC001 | 12 | Ma | L2-U1-N2-R2-Ma2 | 11/03/10 | 358 | 240 | | | Rasgo 2 between 50 and 1 m below the surface |
| MAC001 | 13 | Ma | L2-U1-N2-Ma4 | 18/03/10 | 16 | 9 | | | Rubble below hole 1A |
| MAC001 | 14 | Ma | L2-U1-N3-Ma2 | 22/03/10 | 60 | 56 | | | West façade |
| MAC001 | 15 | Ma | L2-U1-N2-R2-Ma1 | 10/03/10 | 120 | 108 | | | Surface level of rasgo 2 |
| MAC001 | 16 | Ma | L2-U2-N7-SEXT-Ma1 | 14/05/10 | 12 | 3 | | | |
| MAC001 | 17 | Ma | L2-U2-N7E-Ma1 | 18/05/10 | 40 | 29 | | | Test pit |
| MAC001 | 18 | Ma | L2-U2-N6E-Ma1 | 17/05/10 | 8 | 1 | | | Test pit |
| MAC001 | 19 | Ma | L2-U2-N2B-Ma1 | 25/03/10 | 52 | 17 | | | Sand from looter's pit |
| MAC001 | 20 | Ma | L2-U2-SEXT1-N4-Ma1 | 05/04/10 | 16 | 6 | | | Looter's hole |
| MAC001 | 21 | Ma | L2-U2-N2A-MA1 | 29/03/10 | 26 | 14 | | | |
| MAC001 | 22 | Ma | L2-U2-N2B-Ma2 | 29/03/10 | 40 | 25 | | | Sand from looter's pit |
| MAC001 | 23 | Ma | L2-U2-N1-Ma3 | 05/05/10 | 98 | 49 | | | East extension |
| MAC001 | 24 | Ma | L2-U2-N3-Ma2 | 07/05/10 | 60 | 39 | | | |
| MAC001 | 25 | Ma | L2-U2-N3-Ma2 | 07/05/10 | 32 | 11 | | | East extension south half |
| MAC001 | 26 | Ma | L2-U2-N2-Ma1 | 05/05/10 | 100 | 51 | | | East extension |
| MAC001 | 27 | Ma | L2-U2-N3-Ma4 | 10/05/10 | 64 | 25 | | | East extension- east half over the slope |
| MAC001 | 28 | Ma | L2-U2-SEXT1-N1-Ma1 | 31/03/10 | 8 | 5 | | | |
| MAC001 | 29 | Ma | L2-U2-NEXT1-N1-Ma1 | 30/03/10 | 6 | 3 | | | Rubble |
| MAC001 | 30 | Ma | L2-U2-N3-Ma5 | 10/05/10 | 52 | 28 | | | East extension east half |
| MAC001 | 31 | Ma | L2-U2-N4-Ma1 | 07/04/10 | 126 | 75 | | | |
| MAC001 | 32 | Ma | L2-U2-N1-Ma2 | 24/03/10 | 30 | 19 | | | West half |
| MAC001 | 33 | Ma | L2-U2-SEXT1-N3-Ma1 | 05/04/10 | 10 | 2 | | | |
| MAC001 | 34 | Ma | L2-U2-N5B-Ma1 | 08/04/10 | 5 | 1 | | | Sand from looter's pit |
| MAC001 | 35 | Ma | L2-U2-N4E-Ma2 | 11/05/10 | 18 | 7 | | | Looter's hole north side |
| MAC001 | 36 | Ma | L2-U2-N3-Ma1 | 06/05/10 | 66 | 39 | | | East extension north half |
| MAC001 | 37 | Ma | L2-U2-N3-Ma3 | 10/05/10 | 20 | 12 | | | East extension west half of unit- slope above floors |
| MAC001 | 38 | Ma | L2-U2-NEXT1-N2-Ma1 | 31/03/10 | 14 | 11 | | | |
| MAC001 | 39 | Ma | L2-U2-N2-Ma3 | 07/05/10 | 138 | 63 | | | East extension south half |
| MAC001 | 40 | Ma | L2-U2-N1-Ma5 | 07/05/10 | 46 | 12 | | | East extension south half |
| MAC001 | 41 | Ma | L2-U2-N1-Ma1 | 23/03/10 | 62 | 26 | | | Rubble |
| MAC001 | 42 | Ma | L2-U2-N2-Ma2 | 06/05/10 | 16 | 5 | | | East extension north half |
| MAC001 | 43 | Ma | L2-U2-N4E-Ma1 | 11/05/10 | 46 | 17 | | | Looter's hole south side |
| MAC001 | 44 | Ma | L2-U2-N1-Ma4 | 06/05/10 | 100 | 32 | | | East extension south half |
| MAC001 | 45 | Ma | L2-U5-N1-Ma4 | 21/05/10 | 328 | 358 | | | Vessel contents |
| MAC001 | 46 | Ma | L2-U5-N2-V1-Ma1 | 26/05/10 | 6 | 4 | | | |
| MAC001 | 47 | Ma | L2-U5-N2-Ma3 | 25/05/10 | 26 | 13 | | | Chamber 3 |
| MAC001 | 48 | Ma | L2-U5-N2-Ma1 | 20/05/10 | 118 | 63 | | | Looter's hole |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| MAC001 | 49 | Ma | L2-U5-N1-Ma5 | 27/05/10 | 18 | 8 | | | Huaca B access |
| MAC001 | 50 | Ma | L2-U5-N1-Ma4 | 26/05/10 | 96 | 46 | | | Huaca B access |
| MAC001 | 51 | Ma | L2-U5-N1-Ma5 | 21/05/10 | 270 | 178 | | | Huaca B access |
| MAC001 | 52 | Ma | L2-U5-N1-Ma8 | 25/05/10 | 110 | 94 | | | Huaca B access |
| MAC001 | 53 | Ma | L2-U5-N1-Ma7 | 25/05/10 | 44 | 24 | | | Chamber 6 |
| MAC001 | 54 | Ma | L2-U5-N1-Ma2 | 20/05/10 | 54 | 44 | | | |
| MAC001 | 55 | Ma | L2-U5-N2-Ma6 | 27/05/10 | 14 | 8 | | | Wall between chamber 4 and 5 |
| MAC001 | 56 | Ma | L2-U5-N2-Ma2 | 24/05/10 | 174 | 202 | | | Chamber 4 |
| MAC001 | 57 | Ma | L2-U5-N1-Ma1 | 19/01/10 | 284 | 282 | | | |
| MAC001 | 58 | Ma | L2-U5-N1-Ma6 | 24/05/10 | 174 | 106 | | | Huaca B access |
| MAC001 | 59 | Ma | L2-U4-R3-N2-Ma1 | 12/05/10 | 12 | 6 | | | Level 4 paica |
| MAC001 | 60 | Ma | L2-U4-N5-Ma2 | 17/05/10 | 24 | 24 | 8957 | 7934 | North extension south of M4 |
| MAC001 | 61 | Ma | L2-U4-N5P-Ma2 | 17/05/10 | 50 | 118 | | | Floor 5-5P west of M2 |
| MAC001 | 62 | Ma | L2-U4-N4A-Ma2 | 12/05/10 | 20 | 15 | | | North extension |
| MAC001 | 63 | Ma | L2-U4-N5B-Ma1 | 20/05/10 | 54 | 55 | | | Floor 5B |
| MAC001 | 64 | Ma | L2-U4-N4-Ma8 | 12/05/10 | 66 | 52 | | | North extension north of M5 |
| MAC001 | 65 | Ma | L2-U4-N4-Ma9 | 18/05/10 | 8 | 8 | | | Collapsed wall |
| MAC001 | 66 | Ma | L2-U4-N5PR-Ma2 | 17/05/10 | 122 | 295 | | | Fill from 5PR west of M2 |
| MAC001 | 67 | Ma | L2-U4-R3-N3-Ma1 | 12/05/10 | 8 | 1 | | | North extension north of M5 |
| MAC001 | 68 | Ma | L2-U4-N5PR-Ma1 | 13/05/10 | 152 | 434 | | | |
| MAC001 | 69 | Ma | L2-U4-N6-Ma1 | 24/05/10 | 32 | 24 | | | Far west of unit west of M3 |
| MAC001 | 70 | Ma | L2-U4-N5A-Ma1 | 13/05/10 | 22 | 43 | | | |
| MAC001 | 71 | Ma | L2-U4-N5C-Ma1 | 21/05/10 | 192 | 259 | | | |
| MAC001 | 72 | Ma | L2-U4-N5-Ma3 | 27/05/10 | 94 | 59 | | | M3 bulk above chamber |
| MAC001 | 73 | Ma | L2-U4-R4-N3-Ma1 | 04/06/10 | 12 | 8 | | | South side below platform in sand |
| MAC001 | 74 | Ma | L2-U4-N6-Ma4 | 03/06/10 | 16 | 5 | | | On top of floor 7 |
| MAC001 | 75 | Ma | L2-U4-R4-N1-Ma3 | 28/05/10 | 18 | 6 | | | Inside chamber |
| MAC001 | 76 | Ma | L2-U4-R4-N1-Ma2 | 26/05/10 | 18 | 13 | | | Inside chamber (from mid test cut) |
| MAC001 | 77 | Ma | L2-U4-R4-N2-Ma1 | 31/05/10 | 14 | 9 | | | Platform in R4- chamber |
| MAC001 | 78 | Ma | L2-U4-N5PR-Ma3 | 18/05/10 | 4 | 2 | | | Floor 5PR fill |
| MAC001 | 79 | Ma | L2-R4-N1-Ma1 | 27/05/10 | 52 | 56 | | | |
| MAC001 | 80 | Ma | L2-U4-N5C-Ma2 | 24/05/10 | 98 | 84 | | | Hard mark east of M3 |
| MAC001 | 81 | Ma | L2-U4-R4.N3-Ma2 | 01/06/10 | 32 | 17 | | | |
| MAC001 | 82 | Ma | L2-U4-N6- Ma2 | 25/05/10 | 86 | 88 | | | Hard mark east of M3 |
| MAC001 | 83 | Ma | L2-U4-R3-N1-Ma2 | 12/05/10 | 10 | 8 | | | Level 4 paica |
| MAC001 | 84 | Ma | L2-U3-N5D-Ma1 | 14/05/10 | 98 | 4 | | | |
| MAC001 | 85 | Ma | L2-U4-M2-Ma1 | 26/05/10 | 14 | 5 | | | Inside M2 |
| MAC001 | 86 | Ma | L2-U4-N4A-Ma3 | 28/05/10 | 76 | 69 | | | Above chamber bulk 3a, 4a, 5, 6 |
| MAC001 | 87 | Ma | L2-U4-N6-Ma3 | 31/05/10 | 194 | 210 | | | East of chamber (R4) |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| MAC001 | 88 | Ma | L2-U4-N7-Ma2 | 03/06/10 | 18 | 3 | | | Burned area in eastern 1/2 of unit |
| MAC001 | 89 | Ma | L2-U4-N7-Ma1 | 03/06/10 | 56 | 32 | | | |
| MAC001 | 90 | Ma | L2-U4-N4-Ma6 | 30/04/10 | 34 | 18 | | | West of M2 |
| MAC001 | 91 | Ma | L2-U4-N7-Ma3 | 04/06/10 | 38 | 31 | | | Level of ash in eastern extreme |
| MAC001 | 92 | Ma | L2-U4-N3A-Ma3 | 03/05/10 | 20 | 29 | | | Against M1 |
| MAC001 | 93 | Ma | L2-U4-N1-Ma6 | 29/04/10 | 78 | 83 | | | North extension |
| MAC001 | 94 | Ma | L2-U4-N2-Ma4 | 04/05/10 | 130 | 150 | | | North extension NE corner level 1 & 2 |
| MAC001 | 95 | Ma | L2-U4-N3-Ma3 | 07/05/10 | 66 | 46 | | | North extension south of M4 |
| MAC001 | 96 | Ma | L2-U4-N3A-Ma2 | 22/04/10 | 15 | 14 | | | Hard clay adobe under R1 |
| MAC001 | 97 | Ma | L2-U4-N3-Ma4 | 07/05/10 | 28 | 24 | | | North extension north of M5 |
| MAC001 | 98 | Ma | L2-U4-N2-Ma1 | 16/04/10 | 336 | 253 | | | |
| MAC001 | 99 | Ma | L2-U4-N1-Ma1 | 13/04/10 | 128 | 129 | | | |
| MAC001 | 100 | Ma | L2-U4-N4A-Ma1 | 30/04/10 | 34 | 23 | | | Under 3A west extreme of unit |
| MAC001 | 101 | Ma | L2-U4-N4-Ma5 | 29/04/10 | 80 | 67 | | | West of M2 |
| MAC001 | 102 | Ma | L2-U4-N2-Ma5 | 04/05/10 | 168 | 154 | | | North extension south of M4 |
| MAC001 | 103 | Ma | L2-U4-N1-Ma2 | 14/04/10 | 390 | 451 | | | |
| MAC001 | 104 | Ma | L2-U4-N2-Ma2 | 19/04/10 | 152 | 185 | | | |
| MAC001 | 105 | Ma | L2-U4-N3-Ma1 | 20/04/10 | 126 | 88 | | | |
| MAC001 | 106 | Ma | L2-U4-N4-Ma3 | 27/04/10 | 41 | 57 | | | East side |
| MAC001 | 107 | Ma | L2-U4-N1-Ma4 | 15/04/10 | 8 | 10 | | | Looter's hole 2 |
| MAC001 | 108 | Ma | L2-U4-N2-Ma3 | 03/05/10 | 20 | 17 | | | North extension inside wall |
| MAC001 | 109 | Ma | L2-U4-N4-Ma2 | 26/04/10 | 236 | 444 | | | East side |
| MAC001 | 110 | Ma | L2-U4-N4-Ma7 | 11/05/10 | 34 | 28 | | | North extension south of M4 |
| MAC001 | 111 | Ma | L2-U4-N3-Ma5 | 11/05/10 | 48 | 36 | | | North extension north of M5- NE corner |
| MAC001 | 112 | Ma | L2-U4-N3A-Ma4 | 07/05/10 | 32 | 20 | | | North extension hard pack |
| MAC001 | 113 | Ma | L2-U4-R3-N1-Ma1 | 11/05/10 | 216 | 17 | | | Level 4 paica |
| MAC001 | 114 | Ma | L2-U4-N5-Ma1 | 03/05/10 | 69 | 59 | | | extreme west of unit between M1 and M3 |
| MAC001 | 115 | Ma | L2-U4-N1-Ma3 | 15/04/10 | 196 | 146 | | | |
| MAC001 | 116 | Ma | L2-U4-N1-Ma7 | 30/04/10 | 420 | 405 | | | |
| MAC001 | 117 | Ma | L2-U4-N1-Ma5 | 15/04/10 | 50 | 50 | | | Looter's hole 1 |
| MAC001 | 118 | Ma | L2-U4-N4-Ma1 | 23/04/10 | 74 | 133 | | | |
| MAC001 | 119 | Ma | L2-U4-N3A-Ma1 | 21/04/10 | 30 | 20 | | | Under rasgo 1 very hard clay/adobe mix |
| MAC001 | 120 | Ma | L2-U4-N4-Ma4 | 28/04/10 | 118 | 101 | | | East side of wall |
| MAC002 | 121 | Ma | L2-U3-N4-Ma1 | 10/05/10 | 28 | 29 | | | |
| MAC002 | 122 | Ma | L2-U3-N3E-A2-Ma2 | 10/05/10 | 88 | 94 | | | |
| MAC002 | 123 | Ma | L2-U3-N3A-Ma3 | 03/05/10 | 36 | 30 | | | |
| MAC002 | 124 | Ma | L2-U3-N3E-A1-Ma2 | 10/05/10 | 52 | 40 | | | |
| MAC002 | 125 | Ma | L2-U3-N3-Ma1 | 21/04/10 | 66 | 77 | | | |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| MAC002 | 126 | Ma | L2-U3-N3A-Ma2 | 30/04/10 | 120 | 103 | | | |
| MAC002 | 127 | Ma | L2-U3-CN-N2-Ma2 | 23/04/10 | 46 | 24 | | | Canal level 2 |
| MAC002 | 128 | Ma | L2-U3-N3E-Ma1 | 07/05/10 | 508 | 379 | | | |
| MAC002 | 129 | Ma | L2-U3-N7-Ma1 | 27/04/10 | 238 | 67 | | | |
| MAC002 | 130 | Ma | L2-U3-N3D-Ma1 | 06/04/10 | 66 | 45 | | | On floor |
| MAC002 | 131 | Ma | L2-U3-N3-Ma4 | 22/04/10 | 422 | 430 | | | |
| MAC002 | 132 | Ma | L2-U3-N1-Ma1 | 13/04/10 | 82 | 70 | | | |
| MAC002 | 133 | Ma | L2-U3-N1-Ma8 | 09/04/10 | 12 | 2 | | | Rubble next to canal |
| MAC002 | 134 | Ma | L2-U3-N1-Ma6 | 08/04/10 | 88 | 7 | | | Rubble |
| MAC002 | 135 | Ma | L2-U3-N1-Ma4 | 07/04/10 | 314 | 92 | | | |
| MAC002 | 136 | Ma | L2-U3-CN-N2-Ma1 | 22/04/10 | 94 | 24 | | | |
| MAC002 | 137 | Ma | L2-U3-N5-Ma3 | 10/05/10 | 304 | 331 | | | |
| MAC002 | 138 | Ma | L2-U3-N5-Ma2 | 26/04/10 | 178 | 40 | | | |
| MAC002 | 139 | Ma | L2-U3-N4-A1-Ma1 | 10/05/10 | 94 | 75 | | | |
| MAC002 | 140 | Ma | L2-U3-N1-Ma1 | 05/04/10 | 350 | 264 | | | |
| MAC002 | 141 | Ma | L2-U3-N3E-A2-Ma1 | 07/05/10 | 138 | 151 | | | |
| MAC002 | 142 | Ma | L2-U3-N3C-Ma1 | 03/05/10 | 2610 | 1860 | | | |
| MAC002 | 143 | Ma | L2-U3-N1-Ma4 | 03/05/10 | 78 | 11 | | | |
| MAC002 | 144 | Ma | L2-U3-N2-Ma1 | 21/04/10 | 74 | 70 | | | |
| MAC002 | 145 | Ma | L2-U3-N1-Ma3 | 06/04/10 | 364 | 300 | | | Looter's hole 2 |
| MAC002 | 146 | Ma | L2-U3-CN-N3-Ma1 | 23/04/10 | 68 | 47 | | | Canal level 3 |
| MAC002 | 147 | Ma | L2-U3-N3-Ma2 | 21/04/10 | 38 | 26 | | | |
| MAC002 | 148 | Ma | L2-U3-N5-Ma4 | 11/05/10 | 178 | 93 | | | |
| MAC002 | 149 | Ma | L2-U3-N3E-A1-Ma1 | 07/05/10 | 146 | 32 | | | |
| MAC002 | 150 | Ma | L2-U3-N1-A1-Ma1 | 06/04/10 | 96 | 35 | 12634 | 9084 | Room 1 (ambiente 1) |
| MAC002 | 151 | Ma | L2-U3-N2A-Ma1 | 29/04/10 | 64 | 63 | | | |
| MAC002 | 152 | Ma | L2-U3-R1-N2-Ma2 | 13/04/10 | 20 | 10 | | | |
| MAC002 | 153 | Ma | L2-U3-N3C-Ma2 | 04/05/10 | 1456 | 1377 | | | |
| MAC002 | 154 | Ma | L2-U3-N5B-Ma1 | 12/05/10 | 344 | 155 | | | |
| MAC002 | 155 | Ma | L2-U3-N3D-R1-Ma1 | 07/05/10 | 10 | 5 | | | Firepit 3D |
| MAC002 | 156 | Ma | L2-U3-N3-Ma3 | 21/04/10 | 564 | 552 | | | |
| MAC002 | 157 | Ma | L2-U3-N1-Ma10 | 12/04/10 | 404 | 317 | | | South half of the unit |
| MAC002 | 158 | Ma | L2-U4-N3-Ma2 | 21/04/10 | 26 | 9 | | | East half of unit |
| MAC002 | 159 | Ma | L2-U3-N5C-Ma1 | 14/05/10 | 58 | 63 | | | |
| MAC002 | 160 | Ma | L2-U3-N1-Ma7 | 09/04/10 | 888 | 66 | | | South half of the unit |
| MAC002 | 161 | Ma | L2-U3-N5C-Ma1 | 13/05/10 | 60 | 89 | | | |
| MAC002 | 162 | Ma | L2-U3-N1-Ma5 | 08/04/10 | 18 | 2 | | | Looter's hole 3 |
| MAC002 | 163 | Ma | L2-U3-N1-Ma9 | 12/04/10 | 68 | 8 | | | |
| MAC002 | 164 | Ma | L2-U3-N3A-Ma1 | 29/04/10 | 90 | 71 | | | |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| MAC002 | 165 | Ma | L2-U3-N1-Ma13 | 28/04/10 | 212 | 138 | | | Looter's hole |
| MAC002 | 166 | Ma | L2-U3-N5-Ma1 | 23/04/10 | 28 | 20 | | | |
| MAC002 | 167 | Ma | L2-U3-N2-Ma2 | 27/04/10 | 26 | 4 | | | |
| MAC002 | 168 | Ma | L2-U3-N1-Ma2 | 06/04/10 | 64 | 25 | | | |
| MAC002 | 169 | Ma | L2-U3-N1-Ma2 | 21/04/10 | 212 | 207 | | | |
| MAC002 | 170 | Ma | L2-U3-N2-Ma3 | 28/04/10 | 244 | 244 | | | |
| MAC002 | 171 | Ma | L2-U3-R1-N1-Ma | 12/04/10 | 86 | 62 | | | Inside vessel |
| MAC002 | 172 | Ma | L2-U3-N6-Ma1 | 17/05/10 | 36 | 40 | | | Over floor |
| MAC002 | 173 | Ma | L2-U3-N5C-T1-Ma1 | 13/05/10 | 16 | 17 | | | Tomb 1 (Unit 3) |
| MAC002 | 174 | Ma | L2-U3-N7-Ma2 | 18/05/10 | 396 | 495 | | | |
| MAC002 | 175 | Ma | L2-U3-N7-Ma4 | 20/05/10 | 12 | 9 | | | Inside vessel level 7 |
| MAC002 | 176 | Ma | L2-U3-N7-Ma2 | 14/05/10 | 100 | 117 | | | |
| MAC002 | 177 | Ma | L2-U3-N7-Fg1-Ma1 | 19/05/10 | 8 | 6 | | | |
| MAC002 | 178 | Ma | L2-U3-N7-Ma3 | 19/05/10 | 46 | 62 | | | |
| MAC002 | 179 | Ma | L2-N6-2-Ma1 | 17/03/10 | 94 | 1 | | | Spondylus |
| MAC002 | 180 | Ma | L2-U2-N4E-Ma3 | 14/05/10 | 8 | 2 | | | Sand from test pit |
| MdC001 | 1 | Md | L2-U4-R4-N1-Md1 | 26/05/10 | 214 | 1 | | | Sample of beam (viga) |
| MdC001 | 2 | Md | L2-U3-N3E-A2-Md1 | 07/05/10 | 4 | 1 | | | |
| MdC001 | 3 | Md | L2-U3-N3A-Md1 | 30/04/10 | 10 | 1 | | | |
| MdC001 | 4 | Md | L2-U3-N3C-Md2 | 04/05/10 | 12 | 1 | | | |
| MdC001 | 5 | Md | L2-U3-N3C-Md1 | 03/05/10 | 22 | 1 | | | |
| MdC001 | 6 | Md | L2-U3-N3-Md1 | 21/04/10 | 8 | 1 | | | |
| MdC001 | 7 | Md | L2-U4-N4-Md2 | 12/05/10 | 10 | 1 | | | North extension north of M5 |
| MdC001 | 8 | Md | L2-U4-N6-Md1 | 24/05/10 | 6 | 1 | | | Extreme west of unit between M1 and M3 |
| MdC001 | 9 | Md | L2-U4-N5P-Md1 | 13/05/10 | 2 | 1 | | | Floor 5 |
| MdC001 | 10 | Md | L2-U4-N5-Md2 | 18/05/10 | 38 | 1 | | | West extreme of unit |
| MdC001 | 11 | Md | L2-U4-N4A-Md1 | 12/05/10 | 10 | 1 | | | Sample of beam (viga) |
| MdC001 | 12 | Md | L2-U4-N5-Md1 | 17/05/10 | 242 | 1 | | | Level 5 north extension, south of M4, east of M1 |
| MdC001 | 13 | Md | L2-U1-N1-Md3 | 09/03/10 | 1054 | 1 | | | |
| MdC001 | 14 | Md | L2-U4-N4-Md1 | 29/04/10 | 14 | 1 | 7140 | 27 | West of M2, east of M3 |
| MdC001 | 15 | Md | L2-U4-N1-Md1 | 14/04/10 | 10 | 1 | | | |
| MdC001 | 16 | Md | L2-U4-R1-Md1 | 21/04/10 | 18 | 1 | | | Inside an adobe from rasgo 1 |
| MdC001 | 17 | Md | L2-U4-N1-Md2 | 30/04/10 | 26 | 1 | | | |
| MdC001 | 18 | Md | L2-U4-R4-N3-Md1 | 01/06/10 | 6 | 1 | | | Below platform in sand- north side |
| MdC001 | 19 | Md | L2-U4-N5-Md3 | 25/05/10 | 3098 | 1 | | | Extreme west of unit between M1 and M3 |
| MdC001 | 20 | Md | L2-U1-N1-Md1 | 08/03/10 | 20 | 1 | | | |
| MdC001 | 21 | Md | L2-U1-N2-Md1 | 07/06/10 | 14 | 1 | | | |
| MdC001 | 22 | Md | L2-U1-N1-Md2 | 08/03/10 | 20 | 1 | | | |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| MdC001 | 23 | Md | L2-U5-N3-Md1* | 25/05/10 | 106 | 1 | | | |
| MdC001 | 24 | Md | L2-U5-N1-Md1 | 21/05/10 | 10 | 1 | | | |
| MdC001 | 25 | Md | L2-U1-N1-Md3 | 09/03/10 | 2024 | 1 | | | |
| MdC001 | 26 | Md | L2-U4-N5PR-Md1 | 17/05/10 | 8 | 1 | | | Fill from 5PR west of M2 |
| MdC001 | 27 | Md | L2-U1-N1-Md4 | 09/03/10 | 134 | 1 | | | |
| MeC001 | 1 | Me | L2-U2-N3-P2 | 06/05/10 | 6 | 1 | 248 | 27 | From burnt area of east extension north half |
| MeC001 | 2 | Me | L2-U2-SEXT1.N1.Me1 | 31/03/10 | 8 | 1 | | | |
| MeC001 | 3 | Me | L2-U2-N6E-Me1 | 17/05/10 | 4 | 1 | | | Test pit |
| MeC001 | 4 | Me | L2-J12-S-Me1 | 11/03/10 | 10 | 1 | | | |
| MeC001 | 5 | Me | L2-N14-S-Me1 | 11/03/10 | 12 | 1 | | | |
| MeC001 | 6 | Me | L2-H10-S-Me1 | 09/03/10 | 16 | 1 | | | Metal plaque |
| MeC001 | 7 | Me | L2-J10-S-Me1 | 10/03/10 | 18 | 1 | | | Metal plaque 3x3 cm |
| MeC001 | 8 | Me | L2-U1-N1-Me1 | 10/03/10 | 14 | 1 | | | Rubble north façade |
| MeC001 | 9 | Me | L2-U3-N1-Me3 | 12/04/10 | 26 | 1 | | | Hole south perimeter |
| MeC001 | 10 | Me | L2-U3-N1-Me2 | 08/04/10 | 16 | 1 | | | Looter's hole 3 |
| MeC001 | 11 | Me | L2-U3-N5C-T1-Me1 | 13/05/10 | 2 | 1 | | | |
| MeC001 | 12 | Me | L2-U3-N7-Me1 | 18/05/10 | 2 | 1 | | | In the mouth of Tomb 1 |
| MeC001 | 13 | Me | L2-U3-N3-Me1 | 21/04/10 | 6 | 1 | | | |
| MeC001 | 14 | Me | L2-U3-N5C-T1-Me2 | 13/05/10 | 4 | 1 | | | In the hands of Tomb 1 |
| MeC001 | 15 | Me | L2-U3-N1-Me1 | 06/04/10 | 8 | 1 | | | Looter's hole 2 |
| MeC001 | 16 | Me | L2-U3-N3C-Me2 | 04/05/10 | 8 | 1 | | | |
| MeC001 | 17 | Me | L2-U5-N1-Me1 | 19/05/10 | 6 | 1 | | | |
| MeC001 | 18 | Me | L2-U5-N1-Me4 | 26/05/10 | 10 | 1 | | | Huaca B access |
| MeC001 | 19 | Me | L2-U5-N1-Me3 | 21/05/10 | 8 | 1 | | | Chamber 4 |
| MeC001 | 20 | Me | L2-U5-N1-Me2 | 21/05/10 | 8 | 1 | | | Huaca B access |
| MeC001 | 21 | Me | L2-U4-N4-Me1 | 30/04/10 | 12 | 1 | | | West of M2 |
| MeC001 | 22 | Me | L2-U4-N5C-Me1 | 21/05/10 | 4 | 1 | | | |
| MeC001 | 23 | Me | L2-U4-N2-Me1 | 19/04/10 | 6 | 1 | | | |
| MeC001 | 24 | Me | L2-U4-N6-Me1 | 25/05/10 | 4 | 1 | | | To the east of the hard mark |
| MeC001 | 25 | Me | L2-U4-N5PR-Me1 | 17/05/10 | 4 | 1 | | | West of M2 |
| MeC001 | 26 | Me | L2-M9-S-Me1 | 18/06/10 | 10 | 1 | | | Fragments of metal |
| MeC001 | 27 | Me | L2-T3-S-Me1 | 12/03/10 | 16 | 1 | | | Metal plate tagged 18-6-10 aac |
| AC001 | 1 | O | L2-U1-N4-O1 | 15/03/10 | 16 | 1 | | | Floor 1 |
| AC001 | 2 | O | L2-U1-N3-O1 | 15/03/10 | 50 | 1 | | | Cut in level 3 north façade |
| AC001 | 3 | O | L2-U1-N4B-O1 | 26/03/10 | 54 | 1 | | | Against structure above floor 4B north façade |
| AC001 | 4 | O | L2-U2-N3-O2 | 06/05/10 | 24 | 1 | | | East extension, north half- from burnt area. |
| AC001 | 5 | O | L2-U2-N4E-O5 | 01/06/10 | 4 | 1 | | | Floor (piso) 4B- North side |
| AC001 | 6 | O | L2-U2-N4E-O4 | 01/06/10 | 8 | 1 | | | Floor (piso) 4A |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| AC001 | 7 | O | L2-U2-N4E-O3 | 01/06/10 | 4 | 1 | | | Floor (piso) 4C |
| AC001 | 8 | O | L2-U2-SEXT-N10-T-O1 | 19/05/10 | 6 | 1 | | | In the broken ceramic pot- Maize burnt for c14 |
| AC001 | 9 | O | L2-U2-N7E-O1 | 17/05/10 | 10 | 1 | | | Test pit floor 7E |
| AC001 | 10 | O | L2-U2-N4E-O1 | 14/05/10 | 20 | 1 | | | Sand from test pit |
| AC001 | 11 | O | L2-U2-N1-O2 | 24/03/10 | 26 | 1 | | | Textile and wood/reed from superimposed offering (PP2) |
| AC001 | 12 | O | L2-U2-N4E-O2 | 01/06/10 | 6 | 1 | | | Floor 4B south of ramp |
| AC001 | 13 | O | L2-U2-N3-O1 | 06/05/10 | 10 | 1 | | | East extension- burnt area- seeds and corn cobs |
| AC001 | 14 | O | L2-U3-N4-R4-O4 | 10/05/10 | 18 | 1 | | | |
| AC001 | 15 | O | L2-U3-N6-01 | 27/04/10 | 18 | 1 | | | Around vessel 2 |
| AC001 | 16 | O | L2-U3-N6-O2 | 12/05/10 | 8 | 1 | | | |
| AC001 | 17 | O | L2-U3-N6-O2 | 27/04/10 | 24 | 1 | | | |
| AC001 | 18 | O | L2-U3-N1-O3 | 13/04/10 | 30 | 1 | | | |
| AC001 | 19 | O | L2-U3-N3D-RA-O1 | 07/05/10 | 16 | 1 | | | charcoal for analysis |
| AC001 | 20 | O | L2-U3-N5C-O2 | 14/05/10 | 18 | 1 | | | Firepit associated with floor 5C |
| AC001 | 21 | O | L2-U3-N5C-T1-O1 | 13/05/10 | 8 | 1 | | | |
| AC001 | 22 | O | L2-U3-N6-Fg1-O1 | 19/05/10 | 22 | 1 | 1364 | 43 | |
| AC001 | 23 | O | L2-U3-N5C-O1 | 13/05/10 | 8 | 1 | | | |
| AC001 | 24 | O | L2-U3-N7-O4 | 18/05/10 | 16 | 1 | | | Firepit ajacent to Tomb 1, floor 6 f |
| AC001 | 25 | O | L2-U3-N3D-R1-O2 | 07/05/10 | 24 | 1 | | | Firepit level 3D |
| AC001 | 26 | O | L2-U3-N3D-RA-02 | 27/04/10 | 36 | 1 | | | |
| AC001 | 27 | O | L2-U3-N5-O3 | 11/05/10 | 82 | 1 | | | |
| AC001 | 28 | O | L2-U3-N3C-O6 | 04/05/10 | 46 | 1 | | | |
| AC001 | 29 | O | L2-U3-N6-O3 | 27/04/10 | 486 | 1 | | | Next to sunken floor |
| AC001 | 30 | O | L2-U4-N5B-O2 | 20/05/10 | 2 | 1 | | | Inside post hole 1 |
| AC001 | 31 | O | L2-U4-N5-O2 | 17/05/10 | 12 | 1 | | | North extension, West profile, Next ash pit |
| AC001 | 32 | O | L2-U4-N5PR-O3 | 13/05/10 | 20 | 1 | | | Floor fill. East side of M2- seeds and mate (gourd) |
| AC001 | 33 | O | L2-U4-N4-O8 | 17/05/10 | 4 | 1 | | | From the collapsed wall |
| AC001 | 34 | O | L2-U4-N6-O1 | 25/05/10 | 8 | 1 | | | Just above the beams in the mark |
| AC001 | 35 | O | L2-U4-R4-N3-O2 | 01/06/10 | 14 | 1 | | | North side below platform (under empty chamber) |
| AC001 | 36 | O | L2-U4-N7-O2 | 03/06/10 | 52 | 1 | | | Corn cobs & other bots form under apisonado |
| AC001 | 37 | O | L2-U4-N5B-O1 | 20/05/10 | 12 | 1 | | | Floor 5B and just below floor 5B |
| AC001 | 38 | O | L2-U4-N5C-O1 | 21/05/10 | 8 | 1 | | | Scraped from Floor 5C |
| AC001 | 39 | O | L2-U4-N7-O1 | 03/06/10 | 4 | 1 | | | Seed with of bones from level 7- under apisonado near adobes |
| AC001 | 40 | O | L2-U4-R4-N3-O1 | 01/06/10 | 10 | 1 | | | Below platform- south side (under empty chamber) |
| AC001 | 41 | O | L2-U4-N5PR-O1 | 13/05/10 | 54 | 1 | | | Floor 5 fill (5PR), east of M2 |
| AC001 | 42 | O | L2-U5-N2-V1-O1 | 26/05/10 | 24 | 1 | | | Contents of vessel in chamber 5 |
| AC001 | 43 | O | L2-U4-NP-Or1a2 | 08/06/10 | 42 | 1 | | | 2 samples from north profile- marked on drawing |
| ORC001 | 1 | O | L2-U3-N5-O1 | 10/05/10 | 4 | 1 | | | |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| ORC001 | 2 | O | L2-U3-N6-O6 | 27/04/10 | 44 | 1 | | | |
| ORC001 | 3 | O | L2-U3-CN-N2-O1 | 23/04/10 | 2 | 1 | | | Canal level 2 |
| ORC001 | 4 | O | L2-U3-N3E-A1-O2 | 07/05/10 | 4 | 1 | | | |
| ORC001 | 5 | O | L2-U3-N2A-O2 | 29/04/10 | 10 | 1 | | | |
| ORC001 | 6 | O | L2-U3-N3-O1 | 21/04/10 | 4 | 1 | | | |
| ORC001 | 7 | O | L2-U3-N1-O3 | 28/04/10 | 10 | 1 | | | Looter's hole |
| ORC001 | 8 | O | L2-U3-R1-N1-O2 | 12/04/10 | 2 | 1 | | | Interior of rasgo 1 |
| ORC001 | 9 | O | L2-U3-N2-O2 | 28/04/10 | 10 | 1 | | | |
| ORC001 | 10 | O | L2-U3-N3E-A1-O1 | 07/05/10 | 8 | 1 | | | |
| ORC001 | 11 | O | L2-U3-N3C-O5 | 04/05/10 | 20 | 1 | | | |
| ORC001 | 12 | O | L2-U3-N3A-O3 | 30/04/10 | 240 | 1 | | | |
| ORC001 | 13 | O | L2-U3-N3C-O8 | 04/05/10 | 4 | 1 | | | |
| ORC001 | 14 | O | L2-U3-N1-O4 | 13/04/10 | 8 | 1 | | | |
| ORC001 | 15 | O | L2-U3-R1-N1-O1 | 12/04/10 | 4 | 1 | | | Contents of paica (rasgo 1) |
| ORC001 | 16 | O | L2-U3-R1-N1-O1 | 12/04/10 | 188 | 1 | | | |
| ORC001 | 17 | O | L2-U3-N3E-O1 | 07/05/10 | 22 | 1 | | | |
| ORC001 | 18 | O | L2-U3-N1-O2 | 06/04/10 | 10 | 1 | | | Looter's hole 2 |
| ORC001 | 19 | O | L2-U3-N6-O5 | 27/04/10 | 18 | 1 | | | Firepit 2 |
| ORC001 | 20 | O | L2-U3-N2A-O1 | 29/04/10 | 12 | 1 | | | |
| ORC001 | 21 | O | L2-U3-N3C-O4 | 03/05/10 | 2 | 1 | | | |
| ORC001 | 22 | O | L2-U3-N3E-A2-O1 | 07/05/10 | 18 | 1 | | | |
| ORC001 | 23 | O | L2-U3-N3E-A1-O4 | 07/05/10 | 2 | 1 | | | |
| ORC001 | 24 | O | L2-U3-N3C-U3 | 03/05/10 | 4 | 1 | | | |
| ORC001 | 25 | O | L2-U3-N5-O2 | 11/05/10 | 4 | 1 | | | |
| ORC001 | 26 | O | L2-U3-N4-R4-O3 | 10/05/10 | 262 | 1 | | | |
| ORC001 | 27 | O | L2-U3-N3E-A1-O5 | 10/05/10 | 4 | 1 | | | |
| ORC001 | 28 | O | L2-U3-N3C-O2 | 03/05/10 | 12 | 1 | | | |
| ORC001 | 29 | O | L2-U3-N3A-O1 | 29/04/10 | 12 | 1 | | | |
| ORC001 | 30 | O | L2-U3-N4-R4-O1 | 10/05/10 | 236 | 1 | | | |
| ORC001 | 31 | O | L2-U3-N3C-O1 | 03/05/10 | 10 | 1 | | | |
| ORC001 | 32 | O | L2-U3-N7-O1 | 18/05/10 | 2 | 1 | | | Seed |
| ORC001 | 33 | O | L2-U3-N3C-T1-O2 | 13/05/10 | 4 | 1 | | | Tomb 1 (Unit 3) |
| ORC001 | 34 | O | L2-U3-N7-O5 | 19/05/10 | 72 | 1 | | | |
| ORC001 | 35 | O | L2-U3-N5B-O3 | 12/05/10 | 4 | 1 | | | Corncob |
| ORC001 | 36 | O | L2-U3-N3A-O2 | 30/04/10 | 4 | 1 | | | |
| ORC001 | 37 | O | L2-U3-N3C-O7 | 04/05/10 | 6 | 1 | | | |
| ORC001 | 38 | O | L2-U3-N5C-O4 | 14/05/10 | 2 | 1 | | | Firepit 5C |
| ORC001 | 39 | O | L2-U3-N7-O6 | 19/05/10 | 2 | 1 | | | Inside vessel level 7 |
| ORC001 | 40 | O | L2-U3-N7-O3 | 18/05/10 | 4 | 1 | | | |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| ORC001 | 41 | O | L2-U3-N7-O6 | 20/05/10 | 4 | 1 | | | Inside vessel level 7 |
| ORC001 | 42 | O | L2-U3-N5C-03 | 14/05/10 | 10 | 1 | | | |
| ORC001 | 43 | O | L2-U3-N7-O2 | 18/05/10 | 2 | 1 | | | |
| ORC001 | 44 | O | L2-U3-N6-T2-O1 | 17/05/10 | 4 | 1 | | | Tomb 2- north of individual |
| ORC001 | 45 | O | L2-U3-N1-O1 | 05/04/10 | 20 | 1 | | | Looter's hole |
| ORC001 | 46 | O | L2-U3-N3E-A1-O3 | 07/05/10 | 6 | 1 | | | |
| ORC001 | 47 | O | L2-U3-N4-R4-O2 | 10/05/10 | 56 | 1 | | | |
| ORC001 | 48 | O | L2-U3-N3D-O1 | 06/04/10 | 4 | 1 | | | |
| ORC001 | 49 | O | L2-U3-N2-O1 | 21/04/10 | 40 | 1 | | | |
| ORC001 | 50 | O | L2-U1-RAT1S-O1 | 01/06/10 | 10 | 1 | | | RAT- building 1 |
| ORC001 | 51 | O | L2-U1-RAT10-O2 | 02/06/10 | 8 | 1 | | | Adobe platform west façade |
| ORC001 | 52 | O | L2-U1-N2-R2-O1 | 10/03/10 | 58 | 1 | | | Interior of rasgo 2- surface of northeast corner |
| ORC001 | 53 | O | L2-U1-N1-R1-O1 | 09/03/10 | 8 | 1 | | | Found in between fallen adobe rubble on north side |
| ORC001 | 54 | O | L2-U1-N1-O1 | 09/03/10 | 4 | 1 | | | Rubble from northeast corner |
| ORC001 | 55 | O | L2-U1-N2-R1-O1 | 15/03/10 | 160 | 1 | | | Between adobes from rasgo 1 |
| ORC001 | 56 | O | L2-U1-N2-O3 | 07/06/10 | 2 | 1 | | | Northeast corner |
| ORC001 | 57 | O | L2-U1-N2-O2 | 11/03/10 | 4 | 1 | | | Extreme north of the unit |
| ORC001 | 58 | O | L2-U1-N2-O1 | 09/03/10 | 12 | 1 | | | Between collapsed adobes in level 2 |
| ORC001 | 59 | O | L2-U5-N2-O2 | 20/05/10 | 8 | 1 | | | |
| ORC001 | 60 | O | L2-U5-N2-O5 | 04/06/10 | 4 | 1 | | | Hole, floor 1 chamber 5 |
| ORC001 | 61 | O | L2-U5-N3-O1 | 04/06/10 | 2 | 1 | | | Floor 2 chamber 4 |
| ORC001 | 62 | O | L2-U5-N3-O2 | 04/06/10 | 2 | 1 | | | Access ramp building 1 |
| ORC001 | 63 | O | L2-U5-N2-O4 | 04/06/10 | 4 | 1 | | | Sand associated with possible Chimu bundle |
| ORC001 | 64 | O | L2-U5-N5-O1 | 04/06/10 | 2 | 1 | | | Sand over floor 3 chamber 1 |
| ORC001 | 65 | O | L2-U5-N1-O1 | 19/05/10 | 44 | 1 | 3212 | 129 | |
| ORC001 | 66 | O | L2-U5-N1-O3 | 19/05/10 | 8 | 1 | | | |
| ORC001 | 67 | O | L2-U5-N1-O4 | 20/05/10 | 66 | 1 | | | |
| ORC001 | 68 | O | L2-U5-N1-O2 | 19/05/10 | 6 | 1 | | | |
| ORC001 | 69 | O | L2-U5-N1-O5 | 20/05/10 | 18 | 1 | | | |
| ORC001 | 70 | O | L2-U5-N2-O3 | 27/05/10 | 10 | 1 | | | Wall between chamber 4 and 5 |
| ORC001 | 71 | O | L2-U5-N1-O8 | 21/05/10 | 4 | 1 | | | Huaca B access |
| ORC001 | 72 | O | L2-U5-N1-O6 | 21/05/10 | 8 | 1 | | | Chamber 4 |
| ORC001 | 73 | O | L2-U5-N1-O7 | 21/05/10 | 6 | 1 | | | Chamber 4 |
| ORC001 | 74 | O | L2-U5-N1-O9 | 21/05/10 | 6 | 1 | | | Huaca B access |
| ORC001 | 75 | O | L2-U5-N2-O1 | 20/05/10 | 14 | 1 | | | |
| ORC001 | 76 | O | L2-U5-N1-O10 | 25/05/10 | 6 | 1 | | | Chamber 6 |
| ORC001 | 77 | O | L2-U4-N5B-O3 | 20/05/10 | 18 | 1 | | | Floor 5B |
| ORC001 | 78 | O | L2-U4-N4A-O1 | 12/05/10 | 8 | 1 | | | North extension |
| ORC001 | 79 | O | L2-U4-N5P-O3 | 17/05/10 | 10 | 1 | | | Floor 5, west of M2 |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| ORC001 | 80 | O | L2-U4-N7-O5 | 04/06/10 | 48 | 1 | | | Level of ash east extreme |
| ORC001 | 81 | O | L2-U4-N5PR-O2 | 17/05/10 | 106 | 1 | | | Fill 5PR west of M2 |
| ORC001 | 82 | O | L2-U4-N5C-O2 | 21/05/10 | 6 | 1 | | | |
| ORC001 | 83 | O | L2-U4-N5-O1 | 17/05/10 | 178 | 1 | | | North extension south of M4 |
| ORC001 | 84 | O | L2-U4-N4-O8 | 18/05/10 | 8 | 1 | | | Scarpped from Floor 5C |
| ORC001 | 85 | O | L2-U4-N5P-O2 | 13/05/10 | 8 | 1 | | | |
| ORC001 | 86 | O | L2-U4-N5P-O1 | 13/05/10 | 2 | 1 | | | Floor 5 |
| ORC001 | 87 | O | L2-U4-N4-O6 | 12/05/10 | 96 | 1 | | | North extension north of M5 |
| ORC001 | 88 | O | L2-U4-N4-O7 | 12/05/10 | 2 | 1 | | | |
| ORC001 | 89 | O | L2-U4-N1-R3-O3 | 12/05/10 | 10 | 1 | | | |
| ORC001 | 90 | O | L2-U4-N1-O5 | 15/04/10 | 12 | 1 | | | Looter's hole 1 |
| ORC001 | 91 | O | L2-U4-N2-O3 | 04/05/10 | 30 | 1 | | | Northeast corner north extension levels 1 and 2 |
| ORC001 | 92 | O | L2-U4-N1-O8 | 30/04/10 | 4 | 1 | | | North extension |
| ORC001 | 93 | O | L2-U4-N6-O2 | 31/05/10 | 4 | 1 | | | East of rasgo 4 (the chamber) |
| ORC001 | 94 | O | L2-U4-N7-O3 | 03/06/10 | 10 | 1 | | | Under apisonado |
| ORC001 | 95 | O | L2-U4-N4-O1 | 23/04/10 | 10 | 1 | | | Burnt corncobs |
| ORC001 | 96 | O | L2-U4-N1-O4 | 15/04/10 | 50 | 1 | | | Carbon |
| ORC001 | 97 | O | L2-U4-N4-O5 | 28/04/10 | 4 | 1 | | | East side M2. Burnt corncobs |
| ORC001 | 98 | O | L2-U4-N1-O9 | 30/04/10 | 8 | 1 | | | |
| ORC001 | 99 | O | L2-U4-N2-O4 | 04/05/10 | 4 | 1 | | | South of M4 north extension |
| ORC001 | 100 | O | L2-U4-N1-O2 | 14/04/10 | 12 | 1 | | | Hair |
| ORC001 | 101 | O | L2-U4-N4-O3 | 27/04/10 | 16 | 1 | | | |
| ORC001 | 102 | O | L2-U4-N1-O3 | 15/04/10 | 14 | 1 | | | Feathers |
| ORC001 | 103 | O | L2-U4-N2-O1 | 16/04/10 | 24 | 1 | | | Carbon |
| ORC001 | 104 | O | L2-U4-N4-O2 | 26/04/10 | 26 | 1 | | | East side |
| ORC001 | 105 | O | L2-U4-N1-O7 | 29/04/10 | 8 | 1 | | | North extension |
| ORC001 | 106 | O | L2-U4-N6-O3 | 03/06/10 | 6 | 1 | | | On top of floor 7 |
| ORC001 | 107 | O | L2-U4-N1-O6 | 15/04/10 | 14 | 1 | | | Seeds, corn |
| ORC001 | 108 | O | L2-U4-N3-O1 | 07/05/10 | 2 | 1 | | | North extension north of M5 |
| ORC001 | 109 | O | L2-U4-R3-N1-O2 | 11/05/10 | 26 | 1 | | | |
| ORC001 | 110 | O | L2-U4-N3A-O2 | 03/05/10 | 4 | 1 | | | Against M1 |
| ORC001 | 111 | O | L2-U4-N4-O4 | 27/04/10 | 4 | 1 | | | East side, seeds |
| ORC001 | 112 | O | L2-U4-N1-O1 | 14/04/10 | 44 | 1 | | | Mostly corncobs, mani, mate, seed, fruit, aji |
| ORC001 | 113 | O | L2-U4-N7-O4 | 03/06/10 | 2 | 1 | | | Burn east half of unit |
| ORC001 | 114 | O | L2-U4-N2-O2 | 16/04/10 | 8 | 1 | | | Burnt seeds |
| ORC001 | 115 | O | L2-U4-R3-N1-O1 | 11/05/10 | 4 | 1 | | | Paica N4 |
| ORC001 | 116 | O | L2-U3-N3C-O9 | 04/05/10 | 4 | 1 | | | |
| ORC001 | 117 | O | L2-U2-SEXT1-N1-O1 | 31/03/10 | 36 | 1 | | | |
| ORC001 | 118 | O | L2-U2-N4-O2 | 07/04/10 | 18 | 1 | | | Carbon, seeds, mani |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| ORC001 | 119 | O | L2-U2-MEXT1-N1-O1 | 31/03/10 | 154 | 1 | | | |
| ORC001 | 120 | O | L2-U2-SEXT1-N3-O1 | 05/04/10 | 12 | 1 | | | |
| ORC001 | 121 | O | L2-U2-N4-O1 | 07/04/10 | 8 | 1 | | | Possible carbon dating seeds |
| ORC001 | 122 | O | L2-U2-N1-O1 | 23/03/10 | 4 | 1 | | | Rubble from the surface- maiz |
| ORC001 | 123 | O | L2-U2-N5B-O1 | 08/04/10 | 10 | 1 | | | Sand from looter's hole |
| ORC001 | 124 | O | L2-U2-N3-O5 | 10/05/10 | 4 | 1 | | | East extension west half near upper floors corn cob and gourd |
| ORC001 | 125 | O | L2-U2-N3-O4 | 10/05/10 | 10 | 1 | | | Hard pack in middle of unit below (to east) of adobe wall- leaves |
| ORC001 | 126 | O | L2-U2-SEXT1-N4-O1 | 05/04/10 | 24 | 1 | | | |
| ORC001 | 127 | O | L2-U2-N3-O3 | 06/05/10 | 44 | 1 | | | East extension north half carbon from burnt area |
| ORC001 | 128 | O | L2-U2-Next1-N2-O1 | 31/03/10 | 32 | 1 | | | |
| ORC001 | 129 | O | L2-U4-R5-Or1 | 08/06/10 | 82 | 1 | | | Under M7 with level 7 (both sides of wall) |
| OAC001 | 1 | OA | L2-U5-N1-OA1 | 19/05/10 | 270 | 1 | | | |
| OAC001 | 2 | OA | L2-U5-N1-OA6 | 24/05/10 | 228 | 1 | | | Huaca B access |
| OAC001 | 3 | OA | L2-U5-N1-OH1 | 21/05/10 | 446 | 1 | | | Huaca B access |
| OAC001 | 4 | OA | L2-U5-N2-OA1 | 20/05/10 | 24 | 1 | | | |
| OAC001 | 5 | OA | L2-U5-N1-OA2 | 20/05/10 | 92 | 1 | | | |
| OAC001 | 6 | OA | L2-U5-N1-OA10 | 27/05/10 | 172 | 1 | | | Huaca B access |
| OAC001 | 7 | OA | L2-U5-N1-OA8 | 25/05/10 | 118 | 1 | | | Huaca B access |
| OAC001 | 8 | OA | L2-U5-N1-OH2 | 25/05/10 | 128 | 1 | | | Looted burial in access to Huaca B access |
| OAC001 | 9 | OA | L2-U5-N1-OA7 | 25/05/10 | 32 | 1 | | | Chamber 6 |
| OAC001 | 10 | OA | L2-U5-N1-OA3 | 20/05/10 | 226 | 1 | | | Chamber 4 |
| OAC001 | 11 | OA | L2-U2-Sext1-N4-OA1 | 05/04/10 | 10 | 1 | | | |
| OAC001 | 12 | OA | L2-U2-N3-OA3 | 07/05/10 | 16 | 1 | | | East extension south half |
| OAC001 | 13 | OA | L2-U2-N2-OA2 | 07/05/10 | 30 | 1 | | | East extension south half |
| OAC001 | 14 | OA | L2-U2-Sext1-N3-OA1 | 05/04/10 | 14 | 1 | | | |
| OAC001 | 15 | OA | L2-U2-N2B-OA1 | 25/03/10 | 44 | 1 | | | Sand from looter's hole |
| OAC001 | 16 | OA | L2-U2-N1-OA2 | 24/03/10 | 24 | 1 | | | |
| OAC001 | 17 | OA | L2-U2-Next1-N1-OA1 | 30/03/10 | 20 | 1 | | | Rubble |
| OAC001 | 18 | OA | L2-U2-Next1-N2-OA1 | 31/03/10 | 8 | 1 | | | |
| OAC001 | 19 | OA | L2-U2-N1-OA1 | 23/03/10 | 94 | 1 | | | Rubble |
| OAC001 | 20 | OA | L2-U2-N3-OA2 | 06/05/10 | 18 | 1 | | | East extension north half |
| OAC001 | 21 | OA | L2-U2-N3-OA1 | 06/05/10 | 92 | 1 | 3022 | 41 | East extension north half |
| OAC001 | 22 | OA | L2-U2-N7Sext-OA1 | 14/05/10 | 12 | 1 | | | |
| OAC001 | 23 | OA | L2-U2-N2-OA1 | 05/05/10 | 56 | 1 | | | East extension |
| OAC001 | 24 | OA | L2-U2-N4E-OA3 | 14/05/10 | 12 | 1 | | | |
| OAC001 | 25 | OA | L2-U2-N3-OA4 | 10/05/10 | 36 | 1 | | | East extension west half |
| OAC001 | 26 | OA | L2-U2-N7E-OA1 | 18/05/10 | 14 | 1 | | | |
| OAC001 | 27 | OA | L2-U2-N1-OA3 | 06/05/10 | 4 | 1 | | | East extension south half |
| OAC001 | 28 | OA | L2-U2-N2A-OA1 | 29/03/10 | 14 | 1 | | | |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| OAC001 | 29 | OA | L2-U2-Sext-N10-T1-OH1 | 21/05/10 | 12 | 1 | | | |
| OAC001 | 30 | OA | L2-U5-N1-OH3 | 21/05/10 | 66 | 1 | | | |
| OAC001 | 31 | OA | L2-U2-Sext-N5-OA1 | 12/05/10 | 20 | 1 | | | |
| OAC001 | 32 | OA | L2-U2-N3-OA5 | 10/05/10 | 16 | 1 | | | East extension east half, no architecture |
| OAC001 | 33 | OA | L2-U2-N4E-OA2 | 11/05/10 | 8 | 1 | | | East extension looter's hole south side |
| OAC001 | 34 | OA | L2-U2-N4E-OA1 | 11/05/10 | 14 | 1 | | | East extension looter's hole north side |
| OAC001 | 35 | OA | L2-U2-N2B-OA2 | 29/03/10 | 18 | 1 | | | Sand from looter's hole |
| OAC001 | 36 | OA | L2-U2-Next1-N1-OA2 | 31/03/10 | 344 | 1 | | | |
| OAC001 | 37 | OA | L2-U2.N4-OA1 | 07/04/10 | 40 | 1 | | | |
| OAC001 | 38 | OA | L2-U2-N6E-OA1 | 17/05/10 | 8 | 1 | | | Test pit |
| OAC001 | 39 | OA | L2-U2-N1-OA2 | 05/05/10 | 80 | 1 | | | East extension |
| OAC001 | 40 | OA | L2-U5-N1-OA10 | 26/05/10 | 132 | 1 | | | Huaca B access |
| OAC001 | 41 | OA | L2-U1-RAT1O-OA1 | 02/06/10 | 10 | 1 | | | North façade |
| OAC002 | 42 | OA | L2-U3-N1-OA10 | 13/04/10 | 96 | 1 | | | Looter's hole |
| OAC002 | 43 | OA | L2-U3-N5B-OA1 | 12/05/10 | 170 | 1 | | | |
| OAC002 | 44 | OA | L2-U3-N7-OA1 | 27/04/10 | 746 | 1 | | | Room 1 (ambiente 1) |
| OAC002 | 45 | OA | L2-U3-N1-A1-OA1 | 06/04/10 | 256 | 1 | | | Room 1 (ambiente 1) |
| OAC002 | 46 | OA | L2-U3-N3E-A2-OA2 | 10/05/10 | 18 | 1 | | | |
| OAC002 | 47 | OA | L2-U3-N5-OA1 | 23/04/10 | 18 | 1 | | | |
| OAC002 | 48 | OA | L2-U3-N4-A1-OA1 | 10/05/10 | 58 | 1 | | | |
| OAC002 | 49 | OA | L2-U3-N3-OA4 | 22/04/10 | 44 | 1 | | | |
| OAC002 | 50 | OA | L2-U3-N3A-OA3 | 03/05/10 | 6 | 1 | | | |
| OAC002 | 51 | OA | L2-U3-N1-OA15 | 03/05/10 | 38 | 1 | | | Looter's hole |
| OAC002 | 52 | OA | L2-U3-N3-OA1 | 21/04/10 | 14 | 1 | | | |
| OAC002 | 53 | OA | L2-U3-N3-OA3 | 21/04/10 | 28 | 1 | | | |
| OAC002 | 54 | OA | L2-U3-N3-OA3 | 21/04/10 | 120 | 1 | | | |
| OAC002 | 55 | OA | L2-U3-N1-OA3 | 06/04/10 | 368 | 1 | | | Looter's hole 2 |
| OAC002 | 56 | OA | L2-U3-N5-OA3 | 10/05/10 | 304 | 1 | | | North extension south of M4 |
| OAC002 | 57 | OA | L2-U3-N1-OA14 | 29/04/10 | 168 | 1 | | | |
| OAC002 | 58 | OA | L2-U3-N3B-OA1 | 30/04/10 | 78 | 1 | | | |
| OAC002 | 59 | OA | L2-U3-N6-R3-OA1 | 27/04/10 | 76 | 1 | | | Inside vessel |
| OAC002 | 60 | OA | L2-U3-N3D-RA-OA1 | 07/05/10 | 4 | 1 | | | Firepit level 3D |
| OAC002 | 61 | OA | L2-U3-N2A-OA1 | 29/04/10 | 36 | 1 | | | |
| OAC002 | 62 | OA | L2-U3-CN-N3-OA1 | 23/04/10 | 12 | 1 | | | Canal level 3 |
| OAC002 | 63 | OA | L2-U3-N7-OA4 | 20/05/10 | 20 | 1 | | | Inside vessel level 7 |
| OAC002 | 64 | OA | L2-U3-N5D-OA1 | 19/05/10 | 58 | 1 | | | |
| OAC002 | 65 | OA | L2-U3-N5C-OA1 | 13/05/10 | 110 | 1 | 6814 | 47 | |
| OAC002 | 66 | OA | L2-U3-N5C-T1-OA1 | 13/05/10 | 18 | 1 | | | Tomb 1 (Unit 3) |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| OAC002 | 67 | OA | L2-U3-N6-OA1 | 17/05/10 | 42 | 1 | | | Over floor |
| OAC002 | 68 | OA | L2-U3-N5C-OA1 | 14/05/10 | 96 | 1 | | | |
| OAC002 | 69 | OA | L2-U3-N8-OA1 | 18/05/10 | 292 | 1 | | | |
| OAC002 | 70 | OA | L2-U3-N3E-OA1 | 07/05/10 | 100 | 1 | | | |
| OAC002 | 71 | OA | L2-U3-N3A-OA2 | 30/04/10 | 34 | 1 | | | |
| OAC002 | 72 | OA | L2-U3-N3D-OA1 | 06/04/10 | 78 | 1 | | | |
| OAC002 | 73 | OA | L2-U3-N3E-A1-OA1 | 10/05/10 | 4 | 1 | | | |
| OAC002 | 74 | OA | L2-U3-N1-OA12 | 21/04/10 | 12 | 1 | | | |
| OAC002 | 75 | OA | L2-U3-N7-OA2 | 14/05/10 | 38 | 1 | | | |
| OAC002 | 76 | OA | L2-U3-N7-Fg1-OA1 | 19/05/10 | 26 | 1 | | | |
| OAC002 | 77 | OA | L2-U3-N6-T2-OH1 | 17/05/10 | 8 | 1 | | | Bones from Tomb 2 |
| OAC002 | 78 | OA | L2-U3-N7-OA3 | 19/05/10 | 56 | 1 | | | |
| OAC002 | 79 | OA | L2-U3-N7-OA2 | 18/05/10 | 558 | 1 | | | |
| OAC002 | 80 | OA | L2-U3-N5-OA4 | 11/05/10 | 718 | 1 | | | |
| OAC002 | 81 | OA | L3-U3-N1-OA4 | 07/04/10 | 192 | 1 | | | |
| OAC002 | 82 | OA | L2-U3-N1-OA8 | 12/04/10 | 164 | 1 | | | Looter's hole 4 |
| OAC002 | 83 | OA | L2-U3-N1-OA9 | 12/04/10 | 344 | 1 | | | South half of the unit |
| OAC002 | 84 | OA | L2-U3-N1-OA6 | 09/04/10 | 298 | 1 | | | South half of the unit |
| OAC002 | 85 | OA | L2-U3-N1-OA5 | 08/04/10 | 124 | 1 | | | Looter's hole 3 |
| OAC002 | 86 | OA | L2-U3-N1-OA1 | 05/04/10 | 510 | 1 | | | Looter's hole |
| OAC002 | 87 | OA | L2-U3-N2-OA2 | 28/04/10 | 136 | 1 | | | |
| OAC002 | 88 | OA | L3-U3-N1-OA13 | 28/04/10 | 120 | 1 | | | Looter's hole |
| OAC003 | 89 | OA | L2-U1-N2-R2-OA1 | 10/03/10 | 28 | 1 | | | Upper level of rasgo 2 |
| OAC003 | 90 | OA | L2-U1-N1-OA1 | 09/03/10 | 6 | 1 | | | Between adobes in rubble |
| OAC003 | 91 | OA | L2-U1-N2-OH1 | 12/03/10 | 20 | 1 | | | Extreme north |
| OAC003 | 92 | OA | L2-U1-N2-OH1 | 11/03/10 | 18 | 1 | | | |
| OAC003 | 93 | OA | L2-U3-N3C-V1 | 04/05/10 | 22 | 1 | | | |
| OAC003 | 94 | OA | L2-U3-N3E-OA2 | 07/05/10 | 4 | 1 | | | |
| OAC003 | 95 | OA | L2-U3-N1-OA7 | 07/04/10 | 28 | 1 | | | |
| OAC003 | 96 | OA | L2-U3-N3-OA2 | 21/04/10 | 116 | 1 | | | |
| OAC003 | 97 | OA | L2-U3-N3A-OA1 | 29/04/10 | 50 | 1 | | | |
| OAC003 | 98 | OA | L2-U3-N3C-OA1 | 03/05/10 | 1024 | 1 | 4078 | 20 | |
| OAC003 | 99 | OA | L2-U3-N1-OA2 | 06/04/10 | 22 | 1 | | | Looter's hole 3 |
| OAC003 | 100 | OA | L2-U3-N3E-A1-OA1 | 07/05/10 | 168 | 1 | | | |
| OAC003 | 101 | OA | L2-U3-N1-OA11 | 21/04/10 | 62 | 1 | | | |
| OAC003 | 102 | OA | L2-U3-N5-OA2 | 26/04/10 | 166 | 1 | | | |
| OAC003 | 103 | OA | L2-U3-N3E-A2-OA1 | 07/05/10 | 368 | 1 | | | |
| OAC003 | 104 | OA | L2-U3-N3C-OA2 | 04/05/10 | 368 | 1 | | | |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| OAC003 | 105 | OA | L2-U3-N5C-T1-OH1 | 13/05/10 | 500 | 1 | | | |
| OAC003 | 106 | OA | L2-U5-N1-OA5 | 21/05/10 | 318 | 1 | | | Huaca B access |
| OAC003 | 107 | OA | L2-U5-N2-OA2 | 24/05/10 | 220 | 1 | | | Chamber 4 |
| OAC003 | 108 | OA | L2-U5-OA4 | 21/05/10 | 570 | 1 | | | Chamber 4 around the ramp |
| OAC004 | 109 | OA | L2-U4-N5P-OA1 | 13/05/10 | 10 | 1 | | | Floor 5 |
| OAC004 | 110 | OA | L2-U4-N5PR-OA2 | 13/05/10 | 30 | 1 | | | Fill 5PR east of M2 |
| OAC004 | 111 | OA | L2-U4-N7-OA2 | 04/06/10 | 156 | 1 | | | Level of ash east extreme |
| OAC004 | 112 | OA | L2-U4-R3-N2-OA1 | 12/05/10 | 4 | 1 | | | Paica level 4 |
| OAC004 | 113 | OA | L2-U4-N5B-OA1 | 20/05/10 | 12 | 1 | | | Floor 5B |
| OAC004 | 114 | OA | L2-U4-N5C-OA2 | 24/05/10 | 54 | 1 | | | Hard mark east of M3 |
| OAC004 | 115 | OA | L2-U4-N5PR-OA3 | 18/05/10 | 10 | 1 | | | Fill 5PR |
| OAC004 | 116 | OA | L2-U4-N5-OA3 | 17/05/10 | 4 | 1 | | | |
| OAC004 | 117 | OA | L2-U4-N5PR-OA1 | 13/05/10 | 16 | 1 | | | Fill 5PR east of M2 |
| OAC004 | 118 | OA | L2-U4-N4A-OA2 | 12/05/10 | 8 | 1 | | | North extension |
| OAC004 | 119 | OA | L2-U4-N5-OA3 | 18/05/10 | 12 | 1 | | | |
| OAC004 | 120 | OA | L2-U4-N5PR-OA4 | 17/05/10 | 40 | 1 | | | Fill 5PR west of M2 |
| OAC004 | 121 | OA | L2-U4-N4-OA7 | 12/05/10 | 28 | 1 | | | North extension north of M5 |
| OAC004 | 122 | OA | L2-U4-N5C-OA1 | 21/05/10 | 232 | 1 | | | |
| OAC004 | 123 | OA | L2-U4-R3-N1-OA2 | 12/05/10 | 8 | 1 | | | Paica level 4 |
| OAC004 | 124 | OA | L2-U4-N3A-OA3 | 03/05/10 | 6 | 1 | | | Against M1 |
| OAC004 | 125 | OA | L2-U4-N4-OA1 | 23/04/10 | 18 | 1 | | | |
| OAC004 | 126 | OA | L2-U4-N6-OA1 | 25/05/10 | 204 | 1 | | | Mark |
| OAC004 | 127 | OA | L2-U4-R1-OA1 | 19/04/10 | 4 | 1 | | | From between adobes |
| OAC004 | 128 | OA | L2-U4-N2-OA1 | 16/04/10 | 288 | 1 | | | |
| OAC004 | 129 | OA | L2-U4-N1-OA1 | 13/04/10 | 32 | 1 | | | |
| OAC004 | 130 | OA | L2-U4-N3-OA2 | 07/05/10 | 4 | 1 | | | North extension south of M4, worked bone |
| OAC004 | 131 | OA | L2-U4-R3-N1-OA1 | 11/05/10 | 6 | 1 | | | Paica level 4 |
| OAC004 | 132 | OA | L2-U4-N2-OA3 | 04/05/10 | 14 | 1 | | | Northeast corner levels 1 and 2 |
| OAC004 | 133 | OA | L2-U4-N3-OA3 | 07/05/10 | 34 | 1 | | | North extension north of M5 |
| OAC004 | 134 | OA | L2-NU4-N1-OA4 | 29/04/10 | 8 | 1 | 3826 | 51 | |
| OAC004 | 135 | OA | L2-U4-N5P-OA2 | 17/05/10 | 26 | 1 | | | West of M2 |
| OAC004 | 136 | OA | L2-U4-N1-OA3 | 15/04/10 | 412 | 1 | | | Looter's hole 1 |
| OAC004 | 137 | OA | L2-U4-N4A-OA1 | 30/04/10 | 22 | 1 | | | Under 3A west extreme of unit |
| OAC004 | 138 | OA | L2-U4-N2-OA2 | 19/04/10 | 102 | 1 | | | |
| OAC004 | 139 | OA | L2-U4-N5-OA1 | 03/05/10 | 14 | 1 | | | Extreme west of unit between M1 and M3 |
| OAC004 | 140 | OA | L2-U4-N4-OA3 | 27/04/10 | 14 | 1 | | | East side |
| OAC004 | 141 | OA | L2-U4-N4-OA4 | 28/04/10 | 62 | 1 | | | East of M2 |
| OAC004 | 142 | OA | L2-U4-N7-OA1 | 03/06/10 | 84 | 1 | | | |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| OAC004 | 143 | OA | L2-U4-N4A-OA3 | 28/05/10 | 12 | 1 | | | Above chamber 3a, 4a, 5, 6 |
| OAC004 | 144 | OA | L2-U4-N4-OA5 | 29/04/10 | 64 | 1 | | | West of wall in middle of unit |
| OAC004 | 145 | OA | L2-U4-N1-OA6 | 30/04/10 | 352 | 1 | | | North extension |
| OAC004 | 146 | OA | L2-U4-N4-OA2 | 26/04/10 | 78 | 1 | | | East side |
| OAC004 | 147 | OA | L3-U4-N1-OA2 | 14/04/10 | 696 | 1 | | | |
| OAC004 | 148 | OA | L2-U4-R5-OA1 | 03/06/10 | 212 | 1 | | | Under apisonado |
| OAC004 | 149 | OA | L2-U4-N3-OA4 | 11/05/10 | 10 | 1 | | | Northeast corner of the north extension north of M5 |
| OAC004 | 150 | OA | L2-U4-R4-N2-OA1 | 31/05/10 | 10 | 1 | | | Platform in R4 (chamber) |
| OAC004 | 151 | OA | L2-U4-R4-N3-OA1 | 01/06/10 | 4 | 1 | | | South side below platform, in sand |
| OAC004 | 152 | OA | L2-U4-N6-OA2 | 31/05/10 | 54 | 1 | | | East of rasgo 4 |
| OAC004 | 153 | OA | L2-U4-N1-OA5 | 29/04/10 | 34 | 1 | | | North extension |
| OAC004 | 154 | OA | L2-U4-N2-OA5 | 04/05/10 | 70 | 1 | | | North extension south of M4 |
| OAC004 | 155 | OA | L2-U4-N3-OA1 | 20/04/10 | 28 | 1 | | | |
| OAC004 | 156 | OA | L2-U4-N4-OA6 | 30/04/10 | 14 | 1 | | | West of M2 |
| OAC004 | 157 | OA | L2-U4-N2-OA4 | 04/05/10 | 130 | 1 | | | Northeast corner north extension levels 1 and 2 |
| OAC004 | 158 | OA | L2-U4-N5-OA4 | 27/05/10 | 68 | 1 | | | M3 bulk above chamber |
| OAC004 | 159 | OA | L2-U4-R4-N1-OA1 | 27/05/10 | 12 | 1 | | | Inside the chamber |
| OAC005 | 160 | OH | L2-U2-Sext-10-T1-OH1 | 21/05/10 | 5136 | 6 | 5136 | 6 | Skeleton from Tomb 1(Unit 2) (6 bags) |
| OTC001 | 1 | Ot | L2-U2-N1-Ot1 | 23/03/10 | 12 | 1 | 7980 | 22 | Textile and reeds (part of offering above Tomb 1- Unit 2) |
| OTC001 | 2 | Ot | L2-U2-N1-Ot2 | 24/03/10 | 340 | 1 | | | Textile and reeds (part of offering above Tomb 1- Unit 2) |
| OTC001 | 3 | Ot | L2-U2-N3-Ot1 | 07/05/10 | 28 | 1 | | | East extension south half |
| OTC001 | 4 | Ot | L2-U2-N5B-Ot1 | 08/04/10 | 356 | 1 | | | Sand- adobe with cane impressions and pumpkin seeds |
| OTC001 | 5 | Ot | L2-U2-N6E-Ot1 | 17/05/10 | 76 | 1 | | | Test pit |
| OTC001 | 6 | Ot | L2-U2-N4-Ot1 | 29/03/10 | 1240 | 1 | | | Sand from looter's hole- floor fragment |
| OTC001 | 7 | Ot | L2-U3-N3E-V1 | 07/05/10 | 1716 | 1 | | | Adobe cone |
| OTC001 | 8 | Ot | L2-U3-N1-D1 | 05/04/10 | 422 | 1 | | | Painted wall fragment |
| OTC001 | 9 | Ot | L2-U3-N3D-R1-Ot1 | 07/05/10 | 36 | 1 | | | Next to 3D rasgo 1 |
| OTC001 | 10 | Ot | L2-U3-N5-V1 | 26/04/10 | 228 | 1 | | | |
| OTC001 | 11 | Ot | L2-U4-R4-N1-Ot1 | 26/05/10 | 446 | 1 | | | |
| OTC001 | 12 | Ot | L2-U4-N3-Ot1 | 11/05/10 | 22 | 1 | | | |
| OTC001 | 13 | Ot | L2-U4-N5C-Ot1 | 21/05/10 | 1036 | 1 | | | |
| OTC001 | 14 | Ot | L2-U4-N3A-Ot1 | 03/05/10 | 36 | 1 | | | |
| OTC001 | 15 | Ot | L2-U4-N1-Ot1 | 15/04/10 | 118 | 1 | | | |
| OTC001 | 16 | Ot | L2-U4-N4-Ot2 | 30/04/10 | 4 | 1 | | | |
| OTC001 | 17 | Ot | L2-U4-N4-Ot1 | 27/04/10 | 238 | 1 | | | |
| OTC001 | 18 | Ot | L2-U4-N1-Ot1 | 29/04/10 | 20 | 1 | | | |
| OTC001 | 19 | Ot | L2-U4-R1-Ot2 | 20/04/10 | 392 | 1 | | | |
| OTC001 | 20 | Ot | L2-U4-N6-Ot2 | 25/05/10 | 802 | 1 | | | |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| OTC001 | 21 | Ot | L2-U4-N6-Ot1 | 25/05/10 | 408 | 1 | | | |
| OTC001 | 22 | Ot | L2-K13-S-Ot1 | 13/04/10 | 4 | 1 | | | Button found near U3 |
| SC001 | 1 | S | L2-U3-N7-S1 | 20/05/10 | 792 | 1 | 34574 | 22 | Inside vessel level 7 |
| SC001 | 2 | S | L2-U1-N4-S1 | 22/03/10 | 46 | 1 | | | North façade associated with floor |
| SC001 | 3 | S | L2-U1-N1-S1 | 08/03/10 | 96 | 1 | | | Rubble from hole 1a on the west side |
| SC001 | 4 | S | L2-U1-N1-S2 | 09/03/10 | 72 | 1 | | | West façade |
| SC001 | 5 | S | L2-U5-N2-S1 | 27/05/10 | 1582 | 1 | | | Contents of vessel in chamber 5 |
| SC001 | 6 | S | L2-U3-R1-N1-S1 | 12/04/10 | 16 | 1 | | | Vessel interior |
| SC001 | 7 | S | L2-U3-N3C-S1 | 03/05/10 | 154 | 1 | | | |
| SC001 | 8 | S | L2-U3-R1-N2-S1 | 13/04/10 | 52 | 1 | | | Vessel interior |
| SC001 | 9 | S | L2-U4-N3A-S1 | 21/04/10 | 10 | 1 | | | |
| SC001 | 10 | S | L2-U3-N7-S2 | 20/05/10 | *10000* | 1 | | | Inside vessel level 7 |
| SC001 | 11 | S | L2-U2-N3-S2 | 06/05/10 | 2610 | 1 | | | Soil sample from burnt area of east extension- lots of organics |
| SC001 | 12 | S | L2-U2-N7E-S1 | 18/05/10 | 444 | 1 | | | Test pit- sample of sand below floor |
| SC001 | 13 | S | L2-U2-N3-S3 | 06/05/10 | 1916 | 1 | | | Soil sample from burnt area of east extension- lots of organics |
| SC001 | 14 | S | L2-U2-N3-S1 | 06/05/10 | 2612 | 1 | | | Soil sample from burnt area of east extension- lots of organics |
| SC001 | 15 | S | L2-U4-R3-N2-S1 | 12/05/10 | 104 | 1 | | | |
| SC001 | 16 | S | L2-U4-N4-S3 | 28/04/10 | 6 | 1 | | | |
| SC001 | 17 | S | L2-U4-N4-S1 | 26/04/10 | 24 | 1 | | | |
| SC001 | 18 | S | L2-U4-N4-S4 | 29/04/10 | 4 | 1 | | | |
| SC001 | 19 | S | L2-U4-N4-S2 | 27/04/10 | 24 | 1 | | | |
| SC001 | 20 | S | L2-U4-R1-S1 | 21/04/10 | 14 | 1 | | | |
| SC001 | 21 | S | L2-U4-R3-N3-S1 | 12/05/10 | 2720 | 1 | | | |
| SC001 | 22 | S | L2-U4-R5-S1 | 08/06/10 | 1276 | 1 | | | |
| SC001 | 23 | S | L2-U5-N2-S2 | 25/05/10 | *10000* | 1 | *10000* | 1 | |
| TC001 | 1 | T | L2-U1-N1-T1 | 18/03/10 | 54 | 1 | | | Rubble from the north façade |
| TC001 | 2 | T | L2-U2-N1-T2 | 23/03/10 | 16 | 1 | | | |
| TC001 | 3 | T | L2-U2-N1-T1 | 23/03/10 | 14 | 1 | | | |
| TC001 | 4 | T | L2-U4-N1-T3 | 30/04/10 | 20 | 1 | | | |
| TC001 | 5 | T | L2-U4-N4-T1 | 28/04/10 | 6 | 1 | | | |
| TC001 | 6 | T | L2-U4-N1-T2 | 15/04/10 | 18 | 1 | | | |
| TC001 | 7 | T | L2-U4-R1-T1 | 20/04/10 | 8 | 1 | | | |
| TC001 | 8 | T | L2-U4-N2-T1 | 16/04/10 | 12 | 1 | | | |
| TC001 | 9 | T | L2-U4-N1-T1 | 14/04/10 | 10 | 1 | | | |
| TC001 | 10 | T | L2-U4-N4-T2 | 28/04/10 | 88 | 1 | | | |
| TC001 | 11 | T | L2-U3-N3C-T2 | 03/05/10 | 134 | 1 | | | |
| TC001 | 12 | T | L2-U3-N1-T1 | 05/04/10 | 8 | 1 | | | Looter's hole |
| TC001 | 13 | T | L2-U3-N1-T2 | 28/04/10 | 66 | 1 | | | Looter's hole |

| Box | Bag | Type | Code | Date (DD/MM/YY) | Grams (Bag) | # Frag ments | Grams (Box) | # Total | Comments/ Location |
|---|---|---|---|---|---|---|---|---|---|
| TC001 | 14 | T | L2-U3-N1-T4 | 28/04/10 | 16 | 1 | 1200 | 30 | |
| TC001 | 15 | T | L2-U3-N1-T3 | 28/04/10 | 12 | 1 | | | |
| TC001 | 16 | T | L2-U3-N2-T1 | 28/04/10 | 18 | 1 | | | |
| TC001 | 17 | T | L2-U3-N3C-T1 | 03/05/10 | 12 | 1 | | | |
| TC001 | 18 | T | L2-U3-N3C-T3 | 04/05/10 | 8 | 2 | | | |
| TC001 | 19 | T | L2-U3-N3C-T1 | 29/04/10 | 16 | 1 | | | |
| TC001 | 20 | T | L2-U5-N1-T7 | 21/05/10 | 8 | 1 | | | Huaca B access |
| TC001 | 21 | T | L2-U5-N1-T2 | 19/05/10 | 8 | 1 | | | |
| TC001 | 22 | T | L2-U5-N1-T3 | 19/05/10 | 8 | 1 | | | |
| TC001 | 23 | T | L2-U5-N1-T1 | 19/05/10 | 28 | 1 | | | |
| TC001 | 24 | T | L2-U5-N1-T6 | 21/05/10 | 30 | 1 | | | Around the ramp in Chamber 4 |
| TC001 | 25 | T | L2-U5-N1-T8 | 25/05/10 | 8 | 1 | | | Chamber 6 |
| TC001 | 26 | T | L2-U5-N1-T9 | 25/05/10 | 14 | 1 | | | Huaca B access |
| TC001 | 27 | T | L2-U5-N1-T5 | 20/05/10 | 6 | 1 | | | |
| TC001 | 28 | T | L2-U5-N1-T4 | 19/05/10 | 16 | 1 | | | |
| TC001 | 29 | T | L2-U5-N2-T1 | 25/05/10 | 538 | 1 | | | Inside chamber 3 |

# APPENDIX B

Ceramic Analysis (Supplement to Chapter 6)

# APPENDIX B.1

Catalog for ceramic analysis at Licapa II

**1 Caja/Box**

**2 Ticket**

**3 Unidad/Unit**

**4 Codigo/Code**

**5 Pieza/Piece**

**6 Forma de vesija/Vessel form**

**NB:** Uppercase letters represent the vessel part and basic form. Lowercase letters represent specific characteristics. For example:

*Uppercase codes*:
A=asa/handle
B=base
Bot=botella/bottle
Bor=borde/rim
C=cantaro/pitcher

*Lowercase Codes*:
p=plain
c=convex
a=anular
pd=pedastal

- A asa/handle
- A.cint asa cintada/bridge handle
- A.estr asa estribo/stirrup spout
- A.sol asa solido/solid handle
- B base/base
- B.a base anular/ring base
- B.c base convexa/convex base
- B.p base plana/flat base
- B.ps base plana con soportes/flat base with supports
- B.pd base pedestal/pedestal base
- B.tri base tripode/tripod base
- B.tetr base tetrápode/tetrapod base
- Bor.Bot borde de botella/bottle rim
- Bor.C borde de cantaro/pitcher rim
- Bor.Can borde de canchero/popcorn maker rim
- Bor.Cue borde de cuenco/rim of bowl
- Bor.Esc borde de escudilla/rim of basin
- Bor.Fl borde de florero/rim of flared bowl
- Bor.O borde de olla/pot rim

- Bor.P borde de paica/large pot rim
- Bor.Pl borde de plato/rim of plate
- Cop copa/cup
- Crpo cuerpo/body
- F.sól figurina sólida
- F.hue figurina hueca/hollow figurine
- G gollete/neck
- Maq maqueta/architectural model
- Sel sello/seal
- T.con tapa cónica/round lid
- T.hon tapa hongo/mushroom shaped lid
- T.p tapa plana/plain lid
- Col colador/strainer
- Cuc cuchara/spoon
- Ral rallador/grater
- Trom trompeta/trumpet
- Put pututo/shell horn
- Son sonaja/rattle
- Oca ocarina
- Ant antara
- Que quena/panpipe
- Pir piruro/spindle whorl
- Tor tortero/flat-bottomed spindle whorl
- Tob tobera/tuyeres
- Mol molde/mold
- Arq arquitectónico/architectonical
- Cue cuenta/bead
- Dij dije/pendant
- Ore orejera/earspool

**7 Condicion de vesija/Vessel condition**

- C completo/complete
- I incompleto/incomplete

**8 Borde/Rim**

- C convexo/convex
- Car carenado/carinated
  - Car.1 carenado arruga/carinated ridge
  - Car.2 carenado redondo/carinated round
  - Car.3 otro/other
- Ex expandido/expanded
  - Ex.1 muy expandido/very expanded
  - Ex.2 ligeramente expandido/slightly expanded
- Ev evertido/everted

    - Ev.1 muy evertido/very everted
    - Ev.2 ligeramente evertido/slightly expanded
- O.div olla divergente/divergent rim on pot
- O.s.cue olla sin cuello/pot without rim
- Pl plataforma/platform
- P.s. paica simple/simple rim on large pot
- P.ref paica reforzado/reinforced rim on large pot
- R recto/straight

**9 Largo de borde (cm)/Length of rim (cm)**

- P pequeño(0-4cm)/small(0-4cm)
- M media(4-6cm)/medium(4-6cm)
- G grande(6-10cm)/large(6-10cm)
- Mg muy grande(>10cm)/very large(>10cm)

**10 Labio/Lip**

- Bis biselado/beveled
- Red redondo/round
- Fac facetado/faceted
- P plano/plain
- Eng engrosado/swollen

**11 Diámetro (mm)/Diameter (mm)**

**12 Estilo/Style**

- M moche,
- M4 moche 4
- M5 moche 5
- MT moche tardio/late moche
- Ch chimu
- Ch1 chimu temprano/early chimu
- Ch2 chimu medio/middle chimu
- Caj cajamarca
- Cas castlilo
- Chic chicama
- otro/other

**13 Cocción/Firing**

**NB:** Sherds are analyzed from the interior to the exterior.

*Codes*:
C= complete
O=oxidized
I=incomplete
R=reduced

**14 Color de pasta/Paste color**

**NB:** Colors are derived from Munsell codes

- M marrón/brown (7.5YR 4/3)
- CM claro marrón/light brown (7.5YR 6/3)
- RM rojizo marrón/reddish brown (5YR 5/4)
- CRM claro rojizo marrón/ light reddish brown (5YR 6/4)
- MF marrón fuerte/strong brown (7.5YR 5/6)
- RA rojizo amarillo/reddish yellow (5YR 6/6)
- R rojo/red (2.5YR 4/6)
- AR amarillento rojo/yellowish red (5YR 5/6)
- CR claro rojo/light red (2.5YR 6/8)
- Ros rosado/pink (7.5YR 7/3)
- OG oscuro gris/dark gray (7.5YR 4/1)
- ORG oscuro rojizo gris/dark reddish gray (5YR 4/5)

**15 Munsell**

**16 Grosor/Thickness**

- F fino/fine
- M medio/medium
- G greusa/thick

**17 Inclusiones Tipo 1/Temper Type 1**

- L limo/silt
- AF arena fina/fine sand
- AM arena media/medium sand
- AG arena gruesa/ thick sand
- AFn arena negra fina/fine black sand
- AFbl arena blanca fina/fine white sand
- AFcbl arena clara blanca fina/ fine clear white sand
- AFg arena gris fina/fine gray sand
- AFcr arena crema fina/fine cream sand
- AGn arena negra gruesa/thick black sand

- AGbl arena blanca gruesa/thick white sand
- AGcbl arena clara blanca gruesa/thick clear white sand
- AGg arena gris gruesa/thick gray sand
- AGcr arena crema gruesa/thick cream sand
- M mica
- G gravilla/gravel
- Gn gravilla negra/black gravel
- Gbl gravilla blanca/white gravel
- Gcbl gravilla clara blanca/ clear white gravel
- Gg gravilla gris/gray gravel
- Gcr gravilla crema/cream gravel
- BA bolas de arcilla/balls of clay
- C concha/shell

**18 Inclusiones Tipo 2/Temper Type 2**

- L limo/silt
- AF arena fina/fine sand
- AM arena media/medium sand
- AG arena gruesa/ thick sand
- AFn arena negra fina/fine black sand
- AFbl arena blanca fina/fine white sand
- AFcbl arena clara blanca fina/ fine clear white sand
- AFg arena gris fina/fine gray sand
- AFcr arena crema fina/fine cream sand
- AGn arena negra gruesa/thick black sand
- AGbl arena blanca gruesa/thick white sand
- AGcbl arena clara blanca gruesa/thick clear white sand
- AGg arena gris gruesa/thick gray sand
- AGcr arena crema gruesa/thick cream sand
- M mica
- G gravilla/gravel
- Gn gravilla negra/black gravel
- Gbl gravilla blanca/white gravel
- Gcbl gravilla clara blanca/ clear white gravel
- Gg gravilla gris/gray gravel
- Gcr gravilla crema/cream gravel
- BA bolas de arcilla/balls of clay
- C concha/shell

**19 Inclusiones Tipo 3/Temper Type 3**

- L limo/silt
- AF arena fina/fine sand
- AM arena media/medium sand
- AG arena gruesa/ thick sand

- AFn arena negra fina/fine black sand
- AFbl arena blanca fina/fine white sand
- AFcbl arena clara blanca fina/ fine clear white sand
- AFg arena gris fina/fine gray sand
- AFcr arena crema fina/fine cream sand
- AGn arena negra gruesa/thick black sand
- AGbl arena blanca gruesa/thick white sand
- AGcbl arena clara blanca gruesa/thick clear white sand
- AGg arena gris gruesa/thick gray sand
- AGcr arena crema gruesa/thick cream sand
- M mica
- G gravilla/gravel
- Gn gravilla negra/black gravel
- Gbl gravilla blanca/white gravel
- Gcbl gravilla clara blanca/ clear white gravel
- Gg gravilla gris/gray gravel
- Gcr gravilla crema/cream gravel
- BA bolas de arcilla/balls of clay
- C concha/shell

**20 Inclusiones por ciento todo/Temper percent total**

**21 Inclusiones por ciento de cada uno/Temper percent for each**

**22 Forma de las inclusiones/Temper shape**

- A angular
- SA subangular
- SR subredondo/subrounded
- R redondo/rounded

**23 Distribucion de inclusions/Distribution of inclusions**

- BO bien ordenado/well sorted
- MO media ordenado/medium sorted
- MalO mal ordenado/poorly sorted

**24 Porosidad/Porosity**

- F fino/fine
- M medio/medium
- G gruesa/thick

**25 Comentarios de inclusions/Comments on temper**

**26 Condicion de superficio/Surface condition**

- E erosionado/eroded
- H hollín/soot
- Esc escorial/slag
- CC calcium carbonate
- V vitrificado/vitrified

**27 Tratamiento de superficie/Surface treatment**

- R restregado/rubbed
- A alisado/smoothed
- P pulido/polished
- B bruñido/burnished

**28 Grosor de engobe/Slip thickness**

- B baño/wash
- Eng engobe/slip
- Pin pintura/paint

**29 Color de engobe exterior/Color of exterior slip**

- A amarillo/yellow (10YR 8/6)
- R rojo/red (2.5YR 4/6)
- Ros rosado/pink (7.5YR 7/4)
- OM oscuro marrón/dark brown (7.5YR 3/3)
- ORM oscuro rojizo marrón/dark reddish brown (5YR 3/3)
- MPM muy pálido marrón/very pale brown (10YR 8/4)
- COlM claro olivo marrón/light olive brown (2.5Y 5/4)
- RA rojizo amarillente/reddish yellow (5YR 6/6)

**30 Color de engobe interior/Color of interior slip**

- A amarillo/yellow (10YR 8/6)
- R rojo/red (2.5YR 4/6)
- Ros rosado/pink (7.5YR 7/4)
- OM oscuro marrón/dark brown (7.5YR 3/3)
- ORM oscuro rojizo marrón/dark reddish brown (5YR 3/3)
- MPM muy pálido marrón/very pale brown (10YR 8/4)

- COlM claro olivo marrón/light olive brown (2.5Y 5/4)
- RA rojizo amarillente/reddish yellow (5YR 6/6)

**31 Munsell**

**32 Color de pintura/Paint color- Exterior**

- M marrón/brown (7.5YR 4/4)
- OM oscuro marrón/dark brown (7.5YR 3/3)
- RM rojizo marrón/reddish brown (5YR 4/4)
- MPM muy palido marrón/very pale brown (10YR 7/3)
- ORM oscuro rojizo marrón/dark reddish brown (2.5YR ¾)
- MOM muy oscuro marrón/very dark brown (7.5YR 3/2)
- MOG muy oscuro gris/very dark gray (10YR 3/1)
- MA marrón amarillo/brownish yellow (10YR 6/6)
- OR oscuro rojo/dark red (2.5YR 3/6)
- AR amarillente rojo/yellowish red (5YR 5/6)

**33 Color de pintura/Paint color-Interior**

- M marrón/brown (7.5YR 4/4)
- OM oscuro marrón/dark brown (7.5YR 3/3)
- RM rojizo marrón/reddish brown (5YR 4/4)
- MPM muy palido marrón/very pale brown (10YR 7/3)
- ORM oscuro rojizo marrón/dark reddish brown (2.5YR ¾)
- MOM muy oscuro marrón/very dark brown (7.5YR 3/2)
- MOG muy oscuro gris/very dark gray (10YR 3/1)
- MA marrón amarillo/brownish yellow (10YR 6/6)
- OR oscuro rojo/dark red (2.5YR 3/6)
- AR amarillente rojo/yellowish red (5YR 5/6)

**34 Munsell**

**35 Calidad de linea exterior/Quality of exterior line**

- MF muy fino/very fine
- F fino/fine
- M medio/medium
- G gruesa/thick
- MFM muy fino, medio/very fine, medium

- MFG muy fino, gruesa/very fine, thick
- MFF muy fino, fino/very fine, fine
- MFFG muy fino, fino, gruesa/ very fine, fine, thick
- FM fino, medio/fine, medium
- FG fino, gruesa/fine, thick
- FMG fino, medio, gruesa/fine, medium, thick

**36 Calidad de linea interior/Quality of interior line**

- MF muy fino/very fine
- F fino/fine
- M medio/medium
- G gruesa/thick
- MFM muy fino, medio/very fine, medium
- MFG muy fino, gruesa/very fine, thick
- MFF muy fino, fino/very fine, fine
- MFFG muy fino, fino, gruesa/ very fine, fine, thick
- FM fino, medio/fine, medium
- FG fino, gruesa/fine, thick
- FMG fino, medio, gruesa/fine, medium, thick

**37 Appliques y extracciones/Applications and extractions**

- Bot boton/button of clay,
- Lis liston/strip,
- Inc incrustacion/inlay,
- Fig figura/figure,
- Mod modelada/hand-molded,
- Mol moldeada/mold-molded,
- Pal paleteado/paddle-stamped,
- Est estampado/stamped,
- Ap a presion/impression,
- Per perforado/perforated,
- Pel pellizcado/pinched,
- Aca acanalado/corrugated,
- Pin pinzado/pinched,
- Inc incision,
- Exc excision,
- Cal calado/soaked

**38 Designo/Design**

- G geométrico/geometric,
    - G.1 lineas/lines,
    - G.2 remolino/swirl,

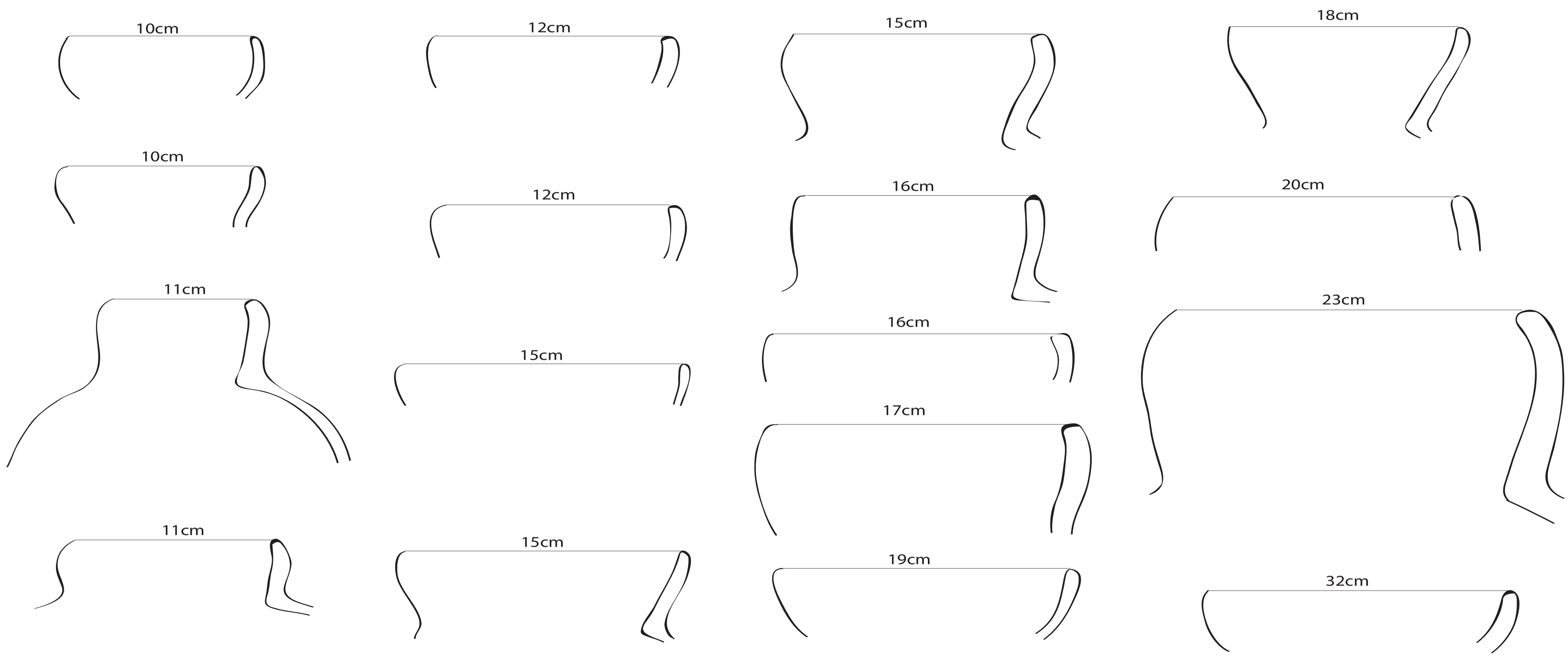
- G.3 olas/waves,
- G.4 puntos/dots,
- G.5 escalanado/stepped,

- F figurative/figurative,
  - F.1 humano/human,
  - F.2 animal,
  - F.3 anthropomorphico/anthropomorphic,
- C complejo/complex

## 39 Commentarios/Comments

# APPENDIX B.2

Rim Type Examples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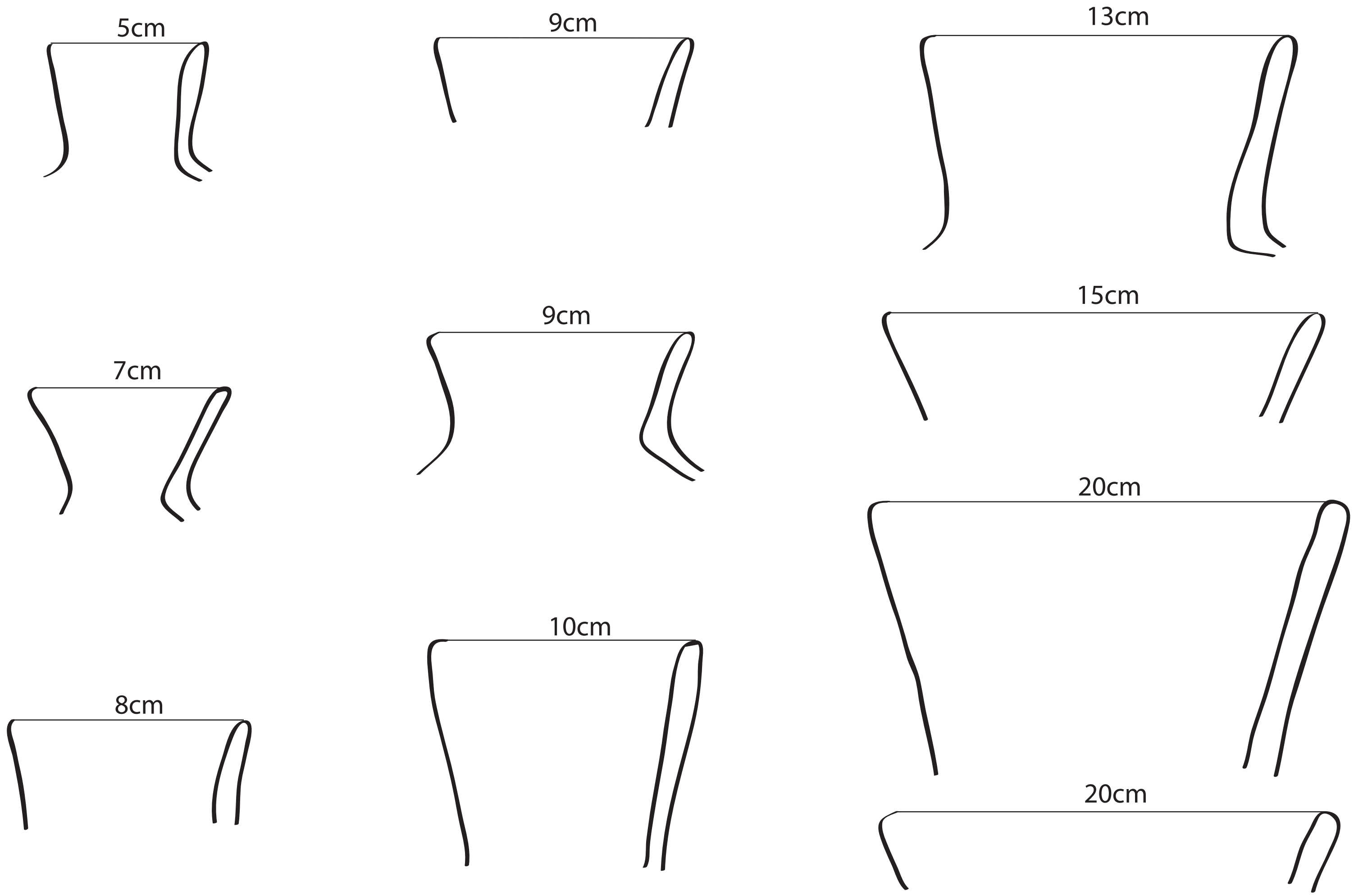
20cm
11cm
16cm
23cm
15cm
17cm
11cm
15cm
19cm
32cm

**Convex**

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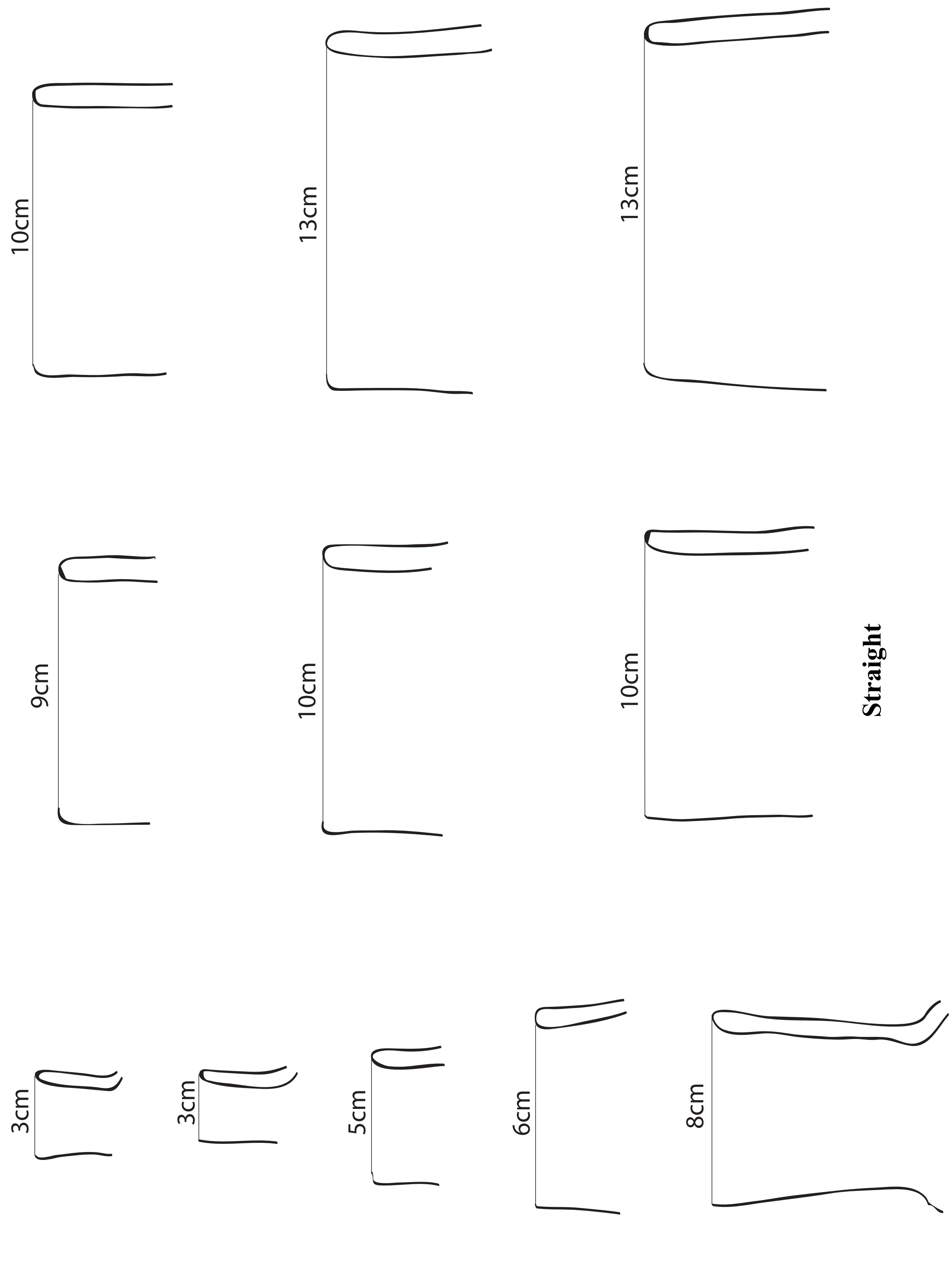
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Straight
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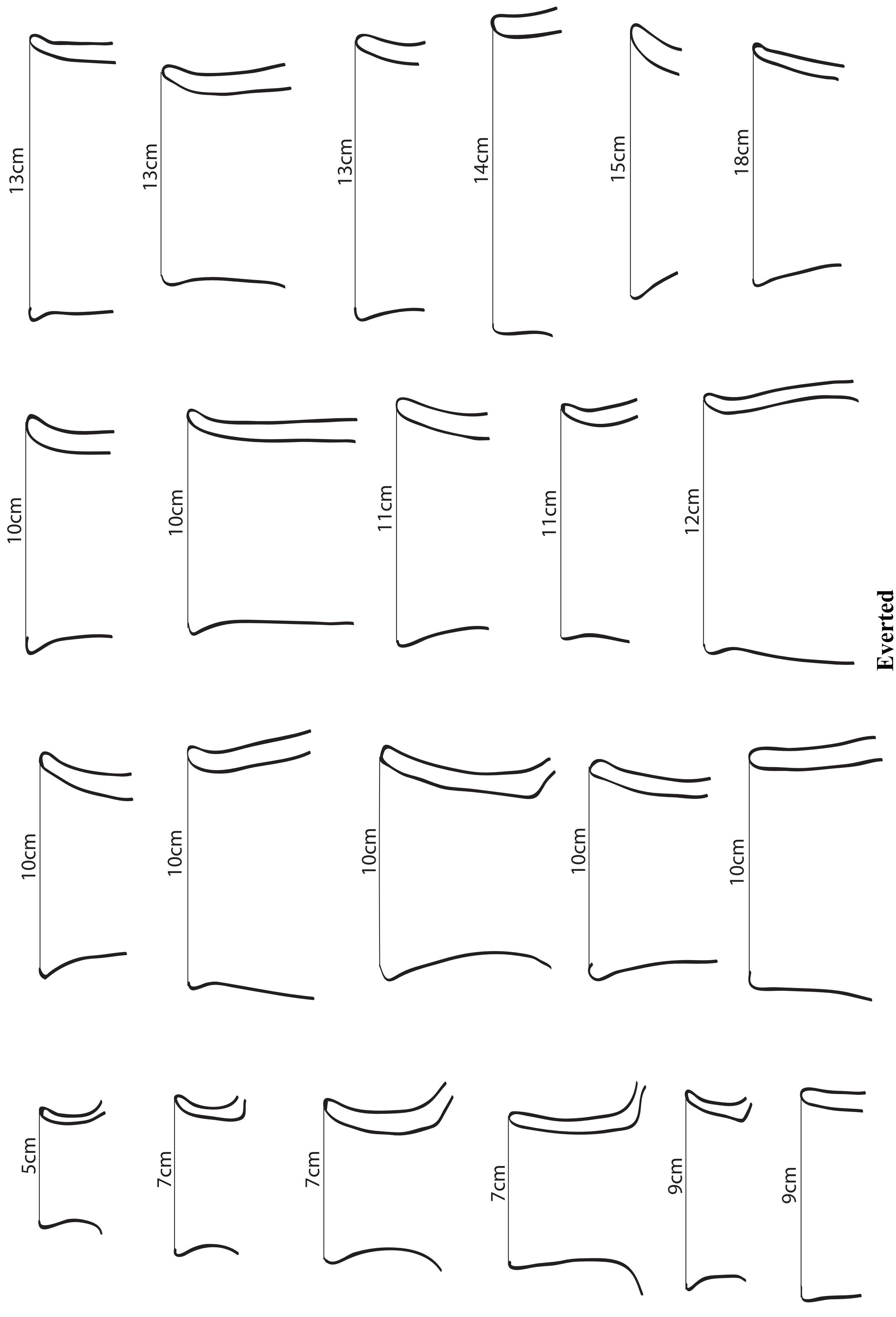
3cm
5cm
6cm
8cm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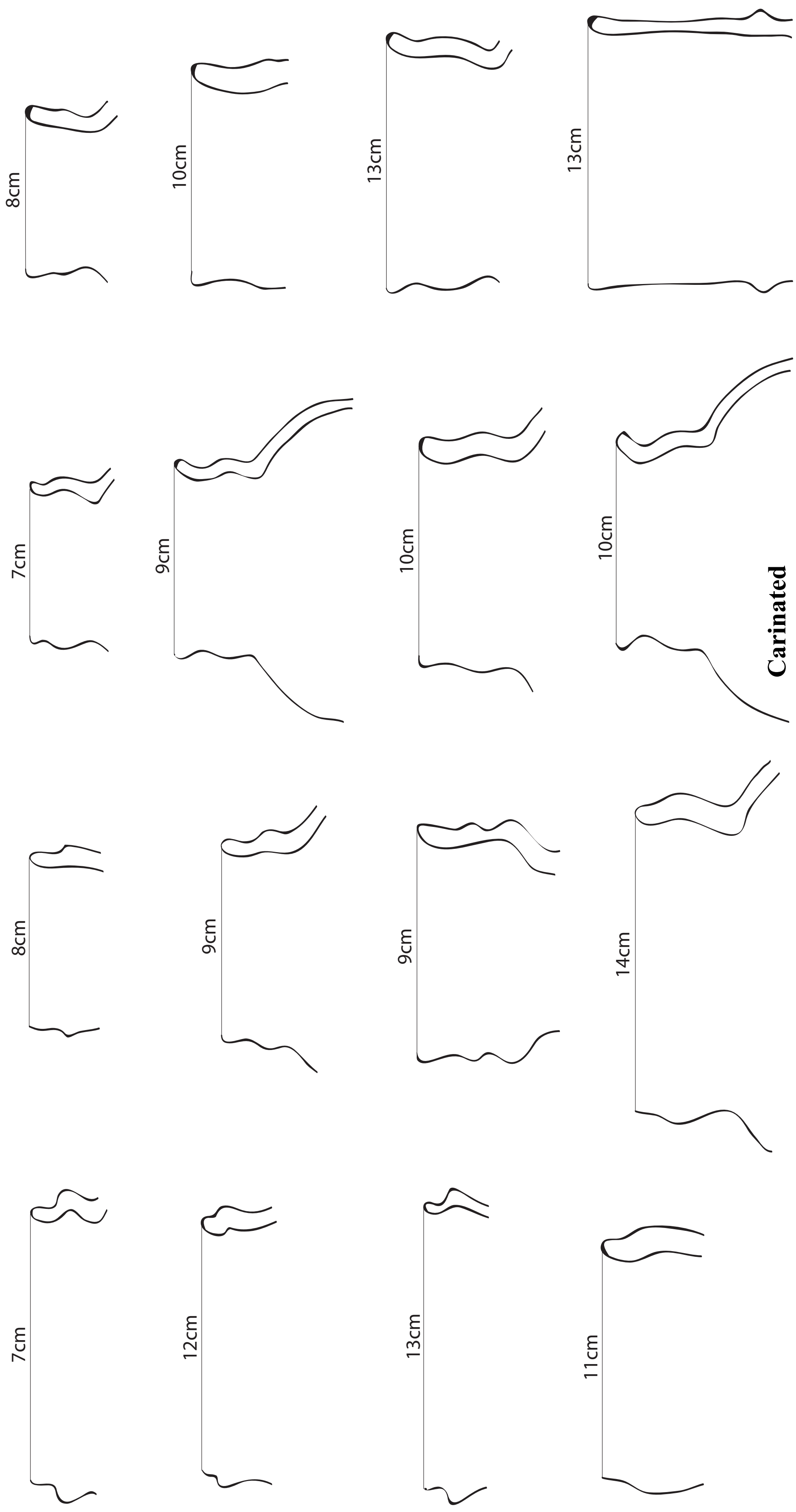
9cm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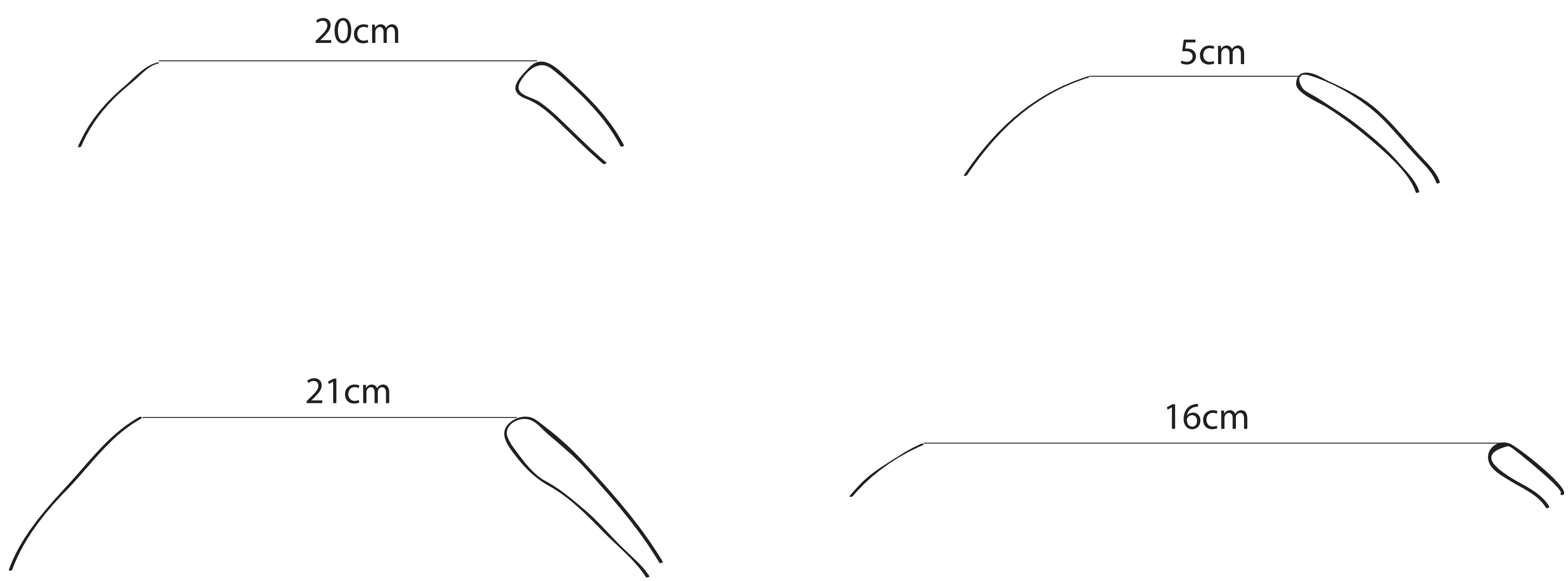
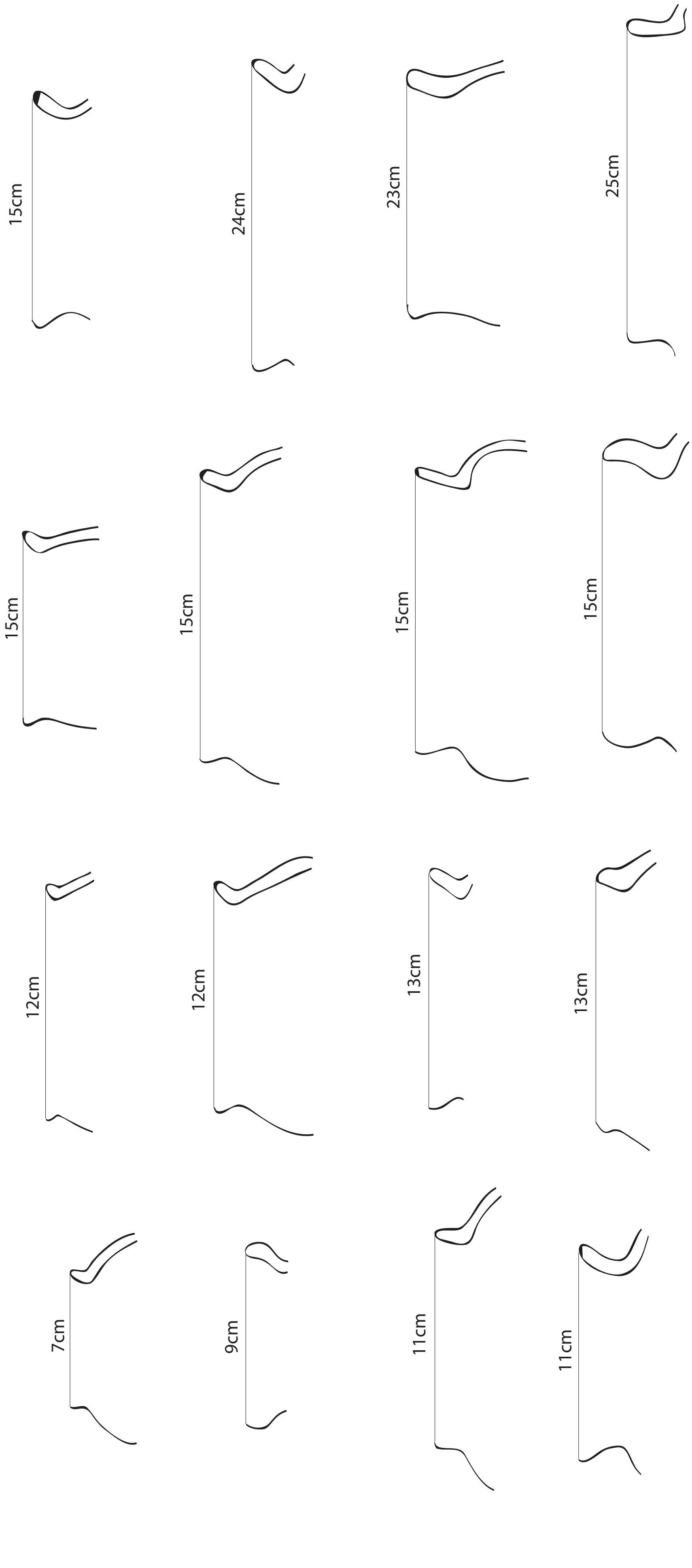
11cm




**Neckless**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12cm
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15cm
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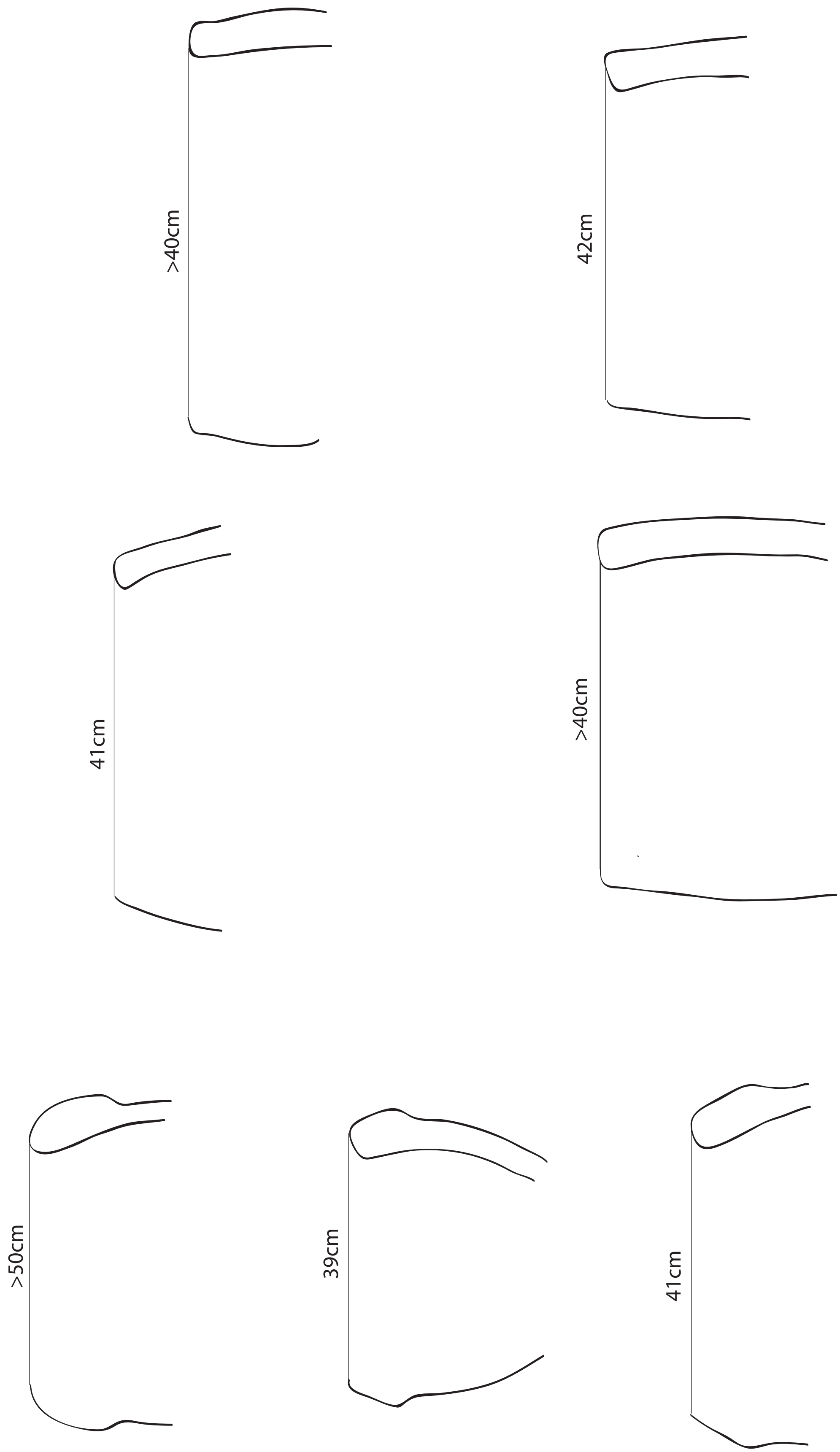
15cm
24cm
11cm
13cm
15cm
23cm
11cm
13cm
15cm
25cm

***Ollas***




***Paicas***

## APPENDIX B.3

Spreadsheet Data for Surface Collection Analysis

| Unit | FigFLbot | GmFLbot | OtherFine | Florero | Jars | Faceneck | Castillo | Pots | Paicas | Fine Serving | Instruments | Other | Undetermined | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| E5 | 0 | 0 | 1 | 0 | 18 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 12 | 33 |
| E7 | 0 | 1 | 4 | 1 | 78 | 6 | 0 | 7 | 0 | 1 | 0 | 0 | 36 | 136 |
| E9 | 0 | 0 | 2 | 2 | 7 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 4 | 21 |
| F6 | 1 | 0 | 3 | 0 | 49 | 5 | 0 | 7 | 3 | 3 | 0 | 0 | 35 | 107 |
| F8 | 0 | 1 | 1 | 1 | 42 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 13 | 61 |
| F10 | 1 | 0 | 5 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 15 |
| G5 | 0 | 0 | 1 | 0 | 39 | 1 | 0 | 4 | 1 | 0 | 0 | 0 | 4 | 50 |
| G7 | 0 | 0 | 1 | 3 | 22 | 3 | 0 | 0 | 2 | 3 | 0 | 0 | 7 | 43 |
| G9 | 0 | 0 | 5 | 0 | 10 | 0 | 1 | 0 | 0 | 2 | 0 | 2 | 1 | 1 |
| H6 | 0 | 0 | 0 | 0 | 45 | 1 | 0 | 1 | 1 | 1 | 0 | 2 | 12 | 63 |
| H8 | 0 | 0 | 1 | 0 | 15 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 25 |
| H10 | 1 | 0 | 1 | 1 | 34 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 40 | 84 |
| I5 | 0 | 0 | 3 | 0 | 36 | 1 | 2 | 7 | 1 | 1 | 0 | 0 | 3 | 54 |
| I7 | 0 | 0 | 1 | 0 | 10 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 3 | 19 |
| I9 | 0 | 0 | 4 | 0 | 24 | 1 | 0 | 1 | 1 | 4 | 0 | 0 | 3 | 38 |
| J4 | 0 | 1 | 2 | 1 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 40 |
| J6 | 1 | 2 | 4 | 0 | 33 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 9 | 52 |
| J8 | 0 | 0 | 3 | 0 | 48 | 1 | 1 | 4 | 0 | 5 | 0 | 0 | 6 | 68 |
| J10 | 3 | 1 | 2 | 1 | 23 | 1 | 0 | 3 | 0 | 0 | 10 | 2 | 3 | 49 |
| J12 | 3 | 0 | 15 | 6 | 62 | 2 | 1 | 15 | 5 | 13 | 13 | 2 | 39 | 179 |
| J14 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 9 |
| K5 | 0 | 0 | 3 | 0 | 32 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 12 | 50 |
| K7 | 0 | 0 | 3 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 16 |
| K9 | 2 | 1 | 3 | 2 | 54 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 19 | 85 |
| K11 | 6 | 2 | 8 | 1 | 25 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 18 | 66 |
| K13 | 11 | 0 | 16 | 3 | 81 | 5 | 3 | 7 | 3 | 21 | 4 | 8 | 49 | 228 |
| L4 | 0 | 0 | 2 | 0 | 13 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 3 | 23 |
| L6 | 1 | 0 | 0 | 0 | 29 | 0 | 0 | 11 | 1 | 0 | 0 | 0 | 3 | 45 |
| L8 | 1 | 0 | 5 | 0 | 37 | 1 | 0 | 4 | 0 | 1 | 0 | 1 | 10 | 62 |
| L10 | 7 | 0 | 22 | 7 | 40 | 0 | 2 | 0 | 0 | 5 | 0 | 1 | 27 | 124 |
| L12 | 2 | 2 | 22 | 11 | 35 | 4 | 2 | 9 | 0 | 10 | 0 | 2 | 37 | 138 |
| L14 | 0 | 0 | 5 | 1 | 24 | 2 | 2 | 6 | 1 | 2 | 0 | 4 | 20 | 70 |
| M5 | 0 | 0 | 4 | 0 | 40 | 3 | 1 | 6 | 2 | 0 | 0 | 1 | 17 | 74 |
| M7 | 1 | 0 | 4 | 0 | 44 | 3 | 0 | 5 | 0 | 1 | 0 | 0 | 8 | 67 |
| M9 | 3 | 0 | 7 | 3 | 61 | 1 | 1 | 5 | 0 | 2 | 0 | 2 | 16 | 102 |
| M11 | 4 | 0 | 14 | 1 | 24 | 0 | 0 | 2 | 1 | 7 | 1 | 0 | 10 | 69 |
| M13 | 2 | 2 | 13 | 13 | 44 | 6 | 0 | 8 | 5 | 3 | 2 | 0 | 23 | 122 |

| Unit | FigFLbot | GmFLbot | OtherFine | Florero | Jars | Faceneck | Castillo | Pots | Paicas | Fine Serving | Instruments | Other | Undetermined | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N4 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 1 | 12 |
| N6 | 1 | 0 | 5 | 1 | 75 | 0 | 0 | 13 | 2 | 2 | 0 | 0 | 12 | 109 |
| N8 | 5 | 2 | 10 | 4 | 87 | 3 | 0 | 8 | 2 | 7 | 0 | 1 | 34 | 165 |
| N10 | 3 | 0 | 8 | 0 | 68 | 1 | 0 | 2 | 2 | 1 | 0 | 0 | 11 | 97 |
| N12 | 0 | 0 | 2 | 4 | 22 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 7 | 40 |
| N14 | 0 | 1 | 9 | 3 | 14 | 0 | 0 | 1 | 1 | 0 | 0 | 9 | 29 | 67 |
| O5 | 0 | 0 | 1 | 0 | 17 | 1 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 18 |
| O7 | 0 | 0 | 5 | 0 | 66 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 8 | 82 |
| O9 | 0 | 0 | 2 | 1 | 41 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 8 | 55 |
| O11 | 0 | 0 | 1 | 1 | 14 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 18 | 38 |
| O13 | 0 | 0 | 6 | 5 | 49 | 0 | 0 | 4 | 1 | 0 | 0 | 1 | 21 | 87 |
| O15 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 2 | 9 |
| P4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| P6 | 0 | 0 | 0 | 2 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 28 |
| P8 | 0 | 1 | 1 | 0 | 81 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 11 | 96 |
| P10 | 1 | 1 | 0 | 3 | 23 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 15 | 44 |
| P12 | 0 | 1 | 9 | 3 | 22 | 1 | 0 | 4 | 2 | 0 | 0 | 1 | 11 | 53 |
| P14 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 5 |
| Q5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 |
| Q7 | 0 | 0 | 0 | 0 | 64 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 7 | 73 |
| Q9 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 16 |
| Q11 | 1 | 0 | 5 | 3 | 19 | 0 | 0 | 2 | 0 | 3 | 0 | 1 | 3 | 39 |
| Q13 | 0 | 0 | 1 | 0 | 12 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 4 | 19 |
| Q15 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | 17 |

**APPENDIX B.4**

Thin Section Analysis

I chose thin sections to examine based on the exterior decoration of the sherd to see if I could determine if the exterior traits correlated to the internal structure of the paste. I examined:
9 sherds from Huacas de Moche (HdM)
8 sherds from El Brujo
7 from San Jose de Moro
28 from Licapa II.
19 from Cerro Mayal

<table>
<tr><th colspan="3">HUACAS DE MOCHE</th></tr>
<tr><th>Sample ID</th><th>Location/ Code on Sherd</th><td rowspan="10">These sherds were excavated in 2010 from the east portion of Architectural Complex 5 in the Urban Zone of the Huacas de Moche and given to me courtesy of Santiago Uceda. They all came from the last occupation in this area and from the first 10-20 cm below the surface. Claude Chapdelaine a Hèléne Bernier y Víctor Pimentel excavated the western part of this Architectural complex in 1998-1999 (Chapdelaine et al. 2004).</td></tr>
<tr><td>HMM2</td><td>Ca5 (sup) 5I: 04-19s/13-19e</td></tr>
<tr><td>HMM5</td><td>No Code</td></tr>
<tr><td>HMM6</td><td>Ca5 (sup) 5J: 0-8s/0-16E</td></tr>
<tr><td>HMM7</td><td>Ca5 (sup) 5I: 0-4s/13-19E</td></tr>
<tr><td>HMM8</td><td>Ca5 (sup) 5I: 04-19s/13-19E</td></tr>
<tr><td>HMM10</td><td>Ca5 (sup) 5J: 0-14s/0-3e</td></tr>
<tr><td>HMM12</td><td>Ca5 (sup) 5J: 0-10s/0-2e</td></tr>
<tr><td>HMM14</td><td>Ca5 (sup) 5J:0-8s/0-16e</td></tr>
<tr><td>HMM19</td><td>No Code</td></tr>
</table>

| EL BRUJO | | | | | |
|---|---|---|---|---|---|
| **Sample ID** | **Code on Sherd** | **Box/Bag** | **Site Coordinates** | **Date** | **Location** |
| EBM1 | - | 14/1 | S:0-6.5-500; E:0-10 | 19-05-1994 | Cao Viejo; Capa A, Nivel 1 |
| EBM2 | - | 13/1 | S:0-6.5-500; E:0-10 | 19-05-1994 | Cao Viejo; Capa A, Nivel 1 |
| EBM3 | - | 13/1 | S:0-6.5-500; E:0-10 | 19-05-1994 | Cao Viejo; Capa A, Nivel 1 |
| EBM4 | - | 13/1 | S:0-6.5-500; E:0-10 | 19-05-1994 | Cao Viejo; Capa A, Nivel 1 |
| EBM5 | - | 13/1 | S:0-6.5-500; E:0-10 | 19-05-1994 | Cao Viejo; Capa A, Nivel 1 |
| EBM7 | - | 13/1 | S:0-6.5-500; E:0-10 | 19-05-1994 | Cao Viejo; Capa A, Nivel 1 |
| EBM13 | 02.2.37.8 | 2/37 | Y:537-541; R:168-172 | 14-06-2002 | Pozo Ceremonial N1; Capa B, Nivel 1 |
| EBM20 | CV.98.D/2(15)3-521 | 15/3 | Y:50.9-53.18; R:266-267.5 | 21-10-1998 | Cao Viejo |

| SAN JOSE DE MORO | | | |
|---|---|---|---|
| **Code and Location/ Sample ID** | **Style** | **Period** | **Excavation Year** |
| A15-C23-04 | Fine line bottle | Late Moche | 2000 |
| A16-C18-148 | Fine line bottle | Late Moche | 2000 |
| A16-C19-7 | Fine line bottle | Late Moche | 2000 |
| A16-C23-01 | Fine line bottle | Late Moche | 2000 |
| A16-C18-156 | Fine line bottle | Late Moche | 2000 |
| A16-C18-157 | Fine line bottle | Late Moche | 2000 |
| A16-C18-158 | Fine line bottle | Late Moche | 2000 |

| LICAPA II | | | |
|---|---|---|---|
| Code | Unit | Level | Year Collected |
| L2-U4-N3-CE2-6 (36) | Unit 4 | Leve 3 | 2010 |
| L2-J4-S-CE1-24 (30) | J4 | Surface | 2010 |
| L2-U3-N3D-CE1-5 (38) | Unit 3 | Level 3D | 2010 |
| L2-U4-N5PR-CE4-4 (29 | Unit 4 | Level 5PR | 2010 |
| L2-U5-N1-CE5-6 (41) | Unit 5 | Level 1 | 2010 |
| L2-U2-N2-CE4-1 (70) | Unit 2 | Level 2 | 2010 |
| L2-U2-N2-CE4-11 (18) | Unit 2 | Level 2 | 2010 |
| L2-U2-N2-CE4-12 (17) | Unit 2 | Level 2 | 2010 |
| L2-U5-N2-CE1-11 (56) | Unit 5 | Level 2 | 2010 |
| L2-U3-N3E-CE1-1 (27) | Unit 3 | Level 3E | 2010 |
| L2-U3-N3C-CE1-12 (7) | Unit 3 | Level 3C | 2010 |
| L2-U3-N3E-A1-CE1-2 (22) | Unit 3 | Level 3E | 2010 |
| L2-2008-2 (73) | Near M7 or N6 | Surface | 2008 |
| L2-L12-S-CE2-56 (9) | L12 | Surface | 2010 |
| L2-U5-N2-CE1-1 (57) | Unit 5 | Level 2 | 2010 |
| L2-U5-N1-CE4-26 (68) | Unit 5 | Level 1 | 2010 |
| L2-U5-N1-CE1-11 (55) | Unit 5 | Level 1 | 2010 |
| L2-U3-N3A-CE3-3 (12) | Unit 3 | Level 3A | 2010 |
| L2-O9-S-CE1-18 (46) | O9 | Surface | 2010 |
| L2-U3-N5B-CE1-3 (52) | Unit 3 | Level 5B | 2010 |
| L2-U3-N3E-A1-CE18 (65) | Unit 3 | Level 3E | 2010 |
| L2-U3-N5-C8-43 (23) | Unit 3 | Level 5 | 2010 |
| L2-2008-S-3 (74) | Near M7 or N6 | Surface | 2008 |
| L2-2008-S-4 (75) | Near M7 or N6 | Surface | 2008 |
| L2-2008-S-1 (72) | Near M7 or N6 | Surface | 2008 |
| L2-U3-CN-N2-CE3-2 | Unit 3-Canal | Level 2 | 2010 |
| L2-U3-N3C-CE1-20 (6) | Unit 3 | Level 3C | 2010 |
| L2-U3-N5-CE6-1 (15) | Unit 3 | Level 5 | 2010 |

Description of the Sherds and Pastes

All the Huacas de Moche sherds are distinct from the sherds from the other 3 sites. There are 2 pastes identified from HdM (**Paste 1** and **Paste 2**). Four of the samples from HdM have large orthopyrecne and weathered orthoclase (**Paste 1**). The other five have round quartz, are medium sorted, and have 35-40% inclusions (**Paste 2**).

**Paste 3** has very few inclusions and they are quite small (very high fine to coarse ratio, 10-15% inclusions). Three of the El Brujo sherds are of this type and one Licapa II sherd (**Paste 3**). Three of the sherds are spouts, suggesting that manufacturing may be a factor.

**Paste 4** seems to be a local Chicama paste. This paste has a lot of well-spaced, very well-sorted sub rounded to sub angular inclusions of mainly feldspar and quartz (50-60% inclusions, high coarse to fine ratio). There is little to no optical activity. There is one variation on this paste, which is not as well-sorted and has slightly larger inclusions (**Paste 4a**). One of these samples of **Paste 4a** is from El Brujo and is the base of a *florero* (EBM7). These pastes was prevalent in the Cerro Mayal samples.

There was only on sherd made of **Paste 5**, which was from the large *paica* fragment painted with the repeating bird motif (see Figure 6.6a). This paste is similar to paste 4, but it has larger inclusions (not as large as **Paste 6**), more rocks rather than mostly feldspar and quartz minerals, and is poorly sorted.

**Paste 6** can be broken down into **6, 6a** and **6b**. All of these have large mineral inclusions and rocks. **Paste 6** has large rocks, whereas **6a** and **6b** are mostly minerals (feldspar predominantly). **6a** has less inclusions and a higher fine to coarse ratio than **6,** or **6B**. The sherds that are composed of **Paste 6B** come from Licapa II and externally look like Late Moche sherds, but the inclusions are different from the other Late Moche examples examines from both SJM and Licapa II (see **Paste 7a**).

**Paste 7** is broken down into 5 divisions (**7, 7a, 7b, 7c, 7d**). They all contain mostly angular to sub angular quartz and feldspar. There are few examples of weathered orthopyrecene's/ orthoclase but they are smaller and less abundant than the samples from Huacas de Moche. All these samples are also very poorly sorted. Subtle variations are the reason for the subdivisions. **Paste 7** has a lot of calcite, and some chlorite and weathered minerals. All the **Paste 7a** samples are from SJM fine line vessels and have a lot of calcite, high optical activity, and a high coarse to fine ratio (50-60% inclusions). **Paste 7b** has more spacing between minerals (higher fine to coarse ratio), not many very small minerals (better sorted). **Paste 7c** has no optical activity (little to no calcite), larger void spaces, and the inclusions are better aligned (show directionality). **Paste 7d** also has no optical activity, larger minerals, and is better sorted than the other paste 7s. All **7d** samples are from stirrup spouts, suggesting more about the part of the vessel rather than the paste.

**Paste 8** is composed of all quartz and feldspar minerals. There are no rocks or other minerals present.

**Paste 9** is similar to paste 7 in that it is poorly sorted and contains mostly quartz and feldspar and some weathered orthopyrecenes. However, the inclusions are more rounded than they are in paste 7. There is also little to no calcite and low optical activity.

**PASTE 1**
HMM5
HMM6
HMM12
HMM14

**PASTE 2**
HMM2
HMM8
HMM7
HMM10
HMM19

**PASTE 3**
EBM1
EBM2
EBM3
L2-U4-N3-CE2-6 (36)

**PASTE 4**
L2-J4-S-CE1-24 (30)
L2-U3-N3D-CE1-5 (38)
L2-U4-N5PR-CE4-4 (29

**PASTE 4A**
L2-U5-N1-CE5-6 (41)
EBM7
L2-U2-N2-CE4-1 (70)
L2-U2-N2-CE4-11 (18)

**PASTE 5**
L2-U2-N2-CE4-12 (17)

**PASTE 6**
L2-U5-N2-CE1-11 (56)
L2-U3-N3E-CE1-1 (27)
L2-U3-N3C-CE1-12 (7)
L2-U3-N3E-A1-CE1-2 (22)

**PASTE 6A**
L2-2008-2 (73)
L2-L12-S-CE2-56 (9)

**PASTE 6B**
L2-U5-N2-CE1-1 (57)
L2-U5-N1-CE4-26 (68)

**PASTE 7**
L2-U5-N1-CE1-11 (55)
L2-U3-N3A-CE3-3 (12)
L2-O9-S-CE1-18 (46)
L2-U3-N5B-CE1-3 (52)
L2-U3-N3E-A1-CE18 (65)
L2-U3-N5-C8-43 (23)

**PASTE 7A**
L2-2008-S-3 (74)
A16-C18-157
L2-2008-S-4 (75)
L2-2008-S-1 (72)
A16-C18-156
A15-C23-04
A15-C23-01

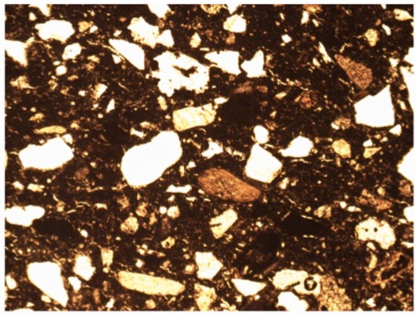
**PASTE 7B**
A16-C18-148
L2-U3-CN-N2-CE3-2

**PASTE 7C**
A16-C19-7
A16-C18-158

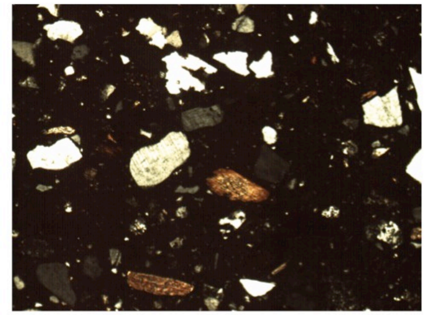
**PASTE 7D**
EBM13
EBM4
L2-U3-N3C-CE1-20 (6)

**PASTE 8**
L2-U3-N5-CE6-1 (15)

**PASTE 9**
EBM20
EBM5



Paste 1



PPL

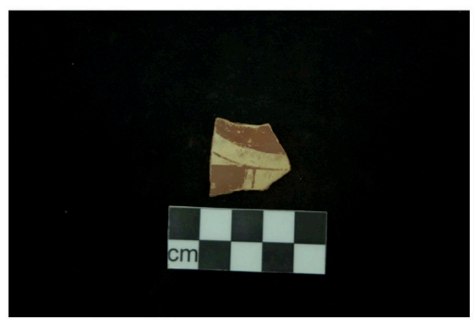
XPL



HMM6

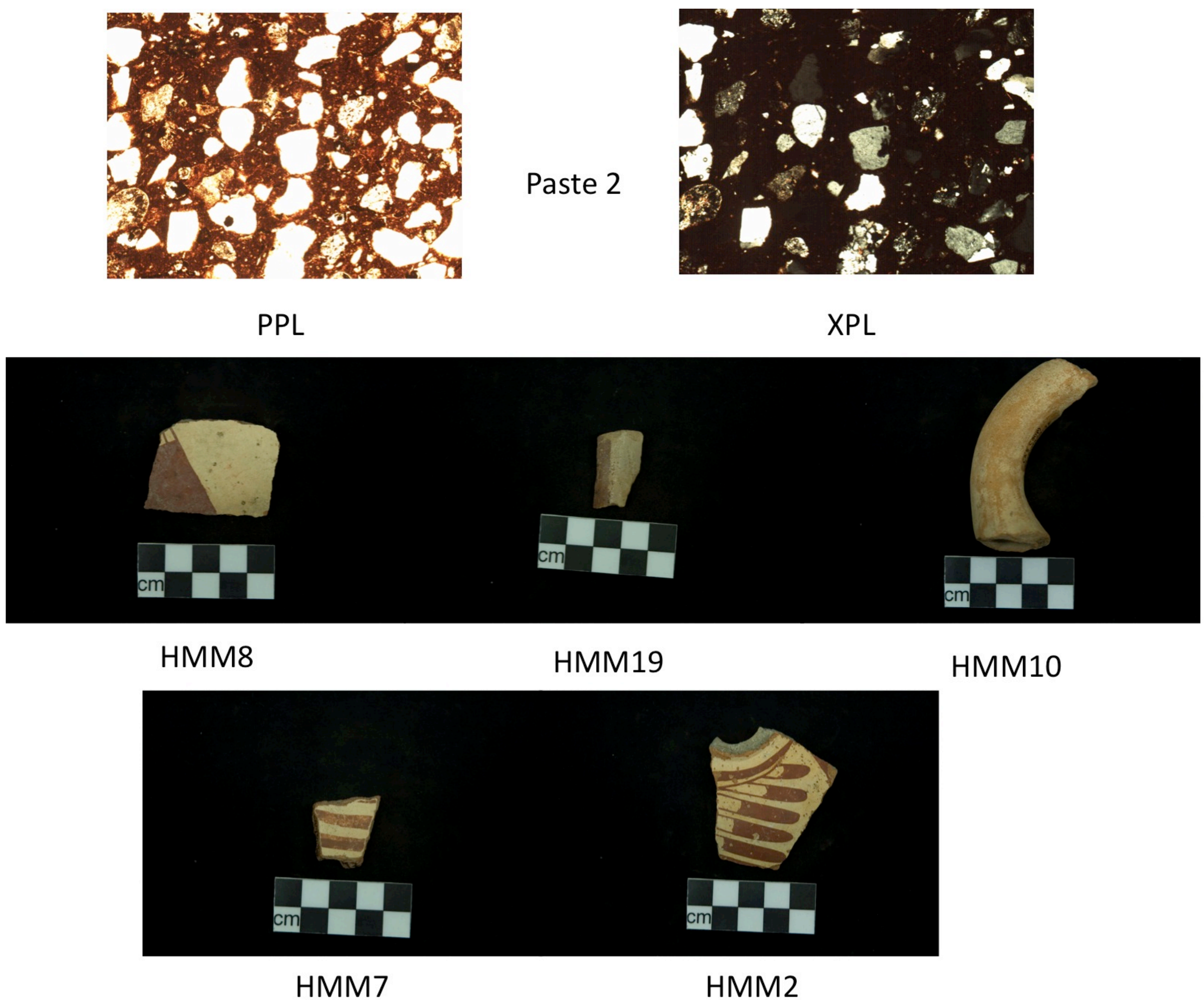
HMM5

HMM12

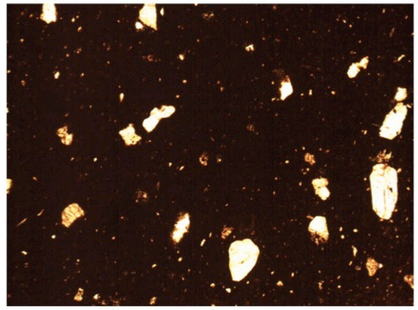




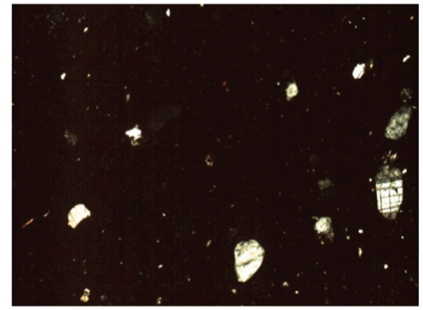
HMM14


Paste 2
PPL
XPL
HMM8
HMM19
HMM10
HMM7
HMM2

Paste 3



PPL

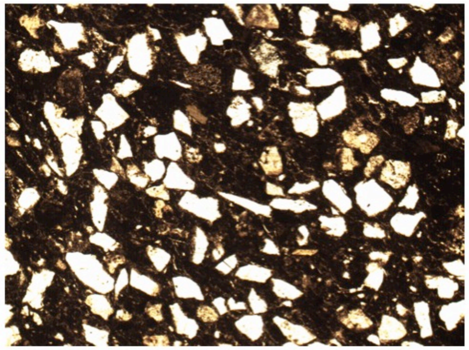


XPL

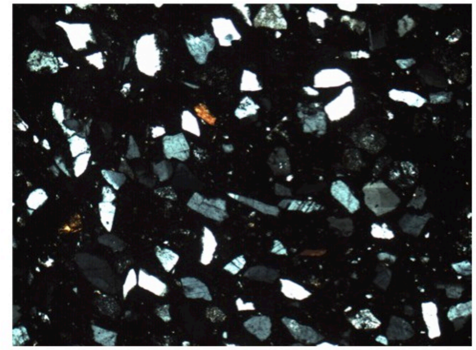
EBM3 EBM2 EBM1

L2-U4-N3-Ce2-6 (36)

Paste 4



PPL



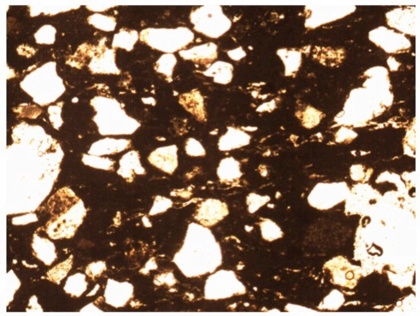
XPL

L2-J4-S-Ce1-24 (30)

L2-U4-N5PR-Ce4-4 (29)

L2-U3-N3D-Ce1-5 (38)

Paste 4a



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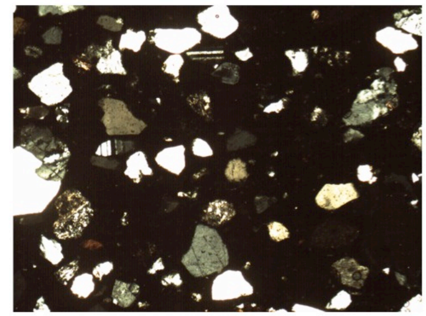
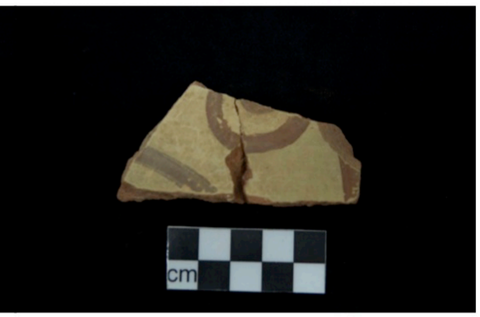


XPL

EBM7

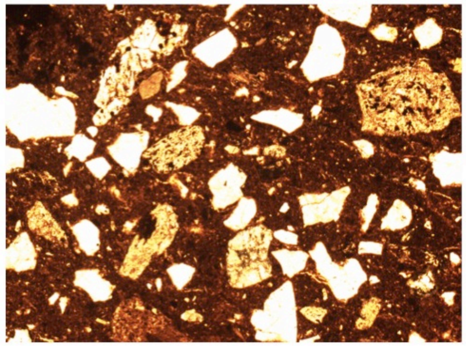
L2-U2-N2-Ce4-1 (70)



L2-U2-N2-Ce4-11 (18)

L2-U5-N1-Ce5-6 (41)

Paste 5



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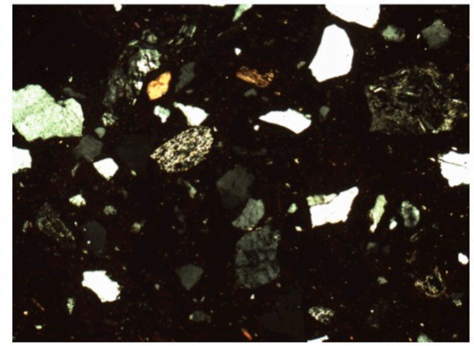
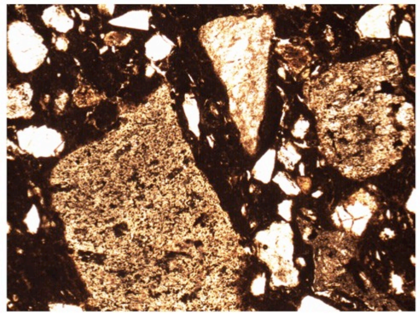


XPL


L2-U2-N2-Ce4-12 (17)

Paste 6



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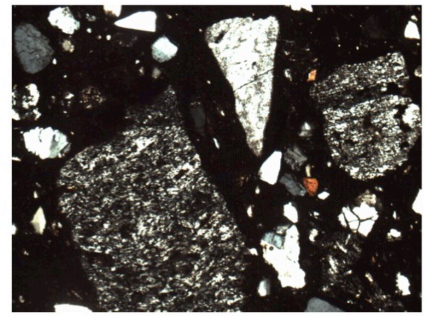


XPL

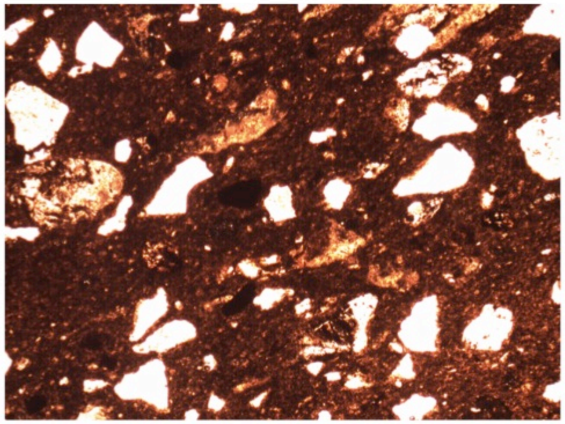

L2-U3-N3C-Ce1-12 (7)


L2-U3-N3E-Ce1-1 (27)


L2-U3-N3E-A1-Ce1-2 (22)


L2-U5-N2-Ce1-2 (56)

Paste 6a



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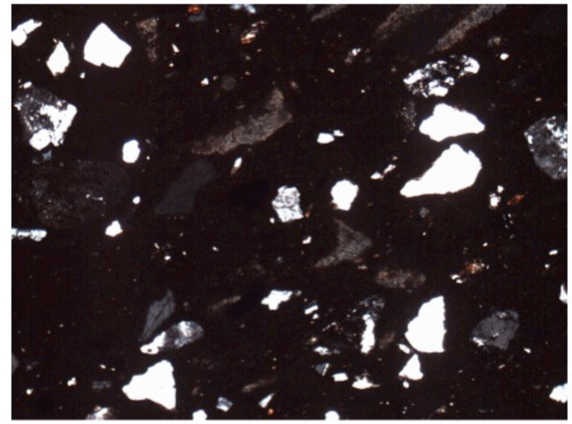
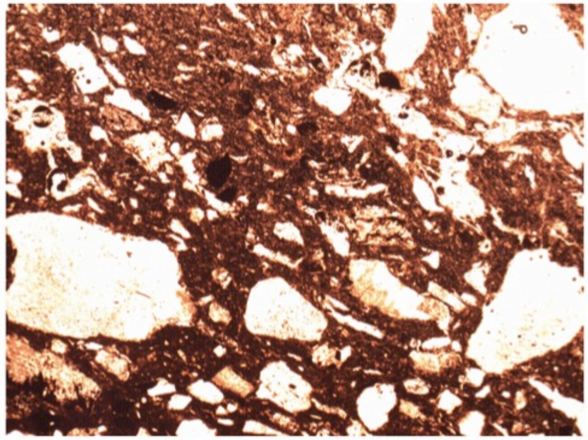


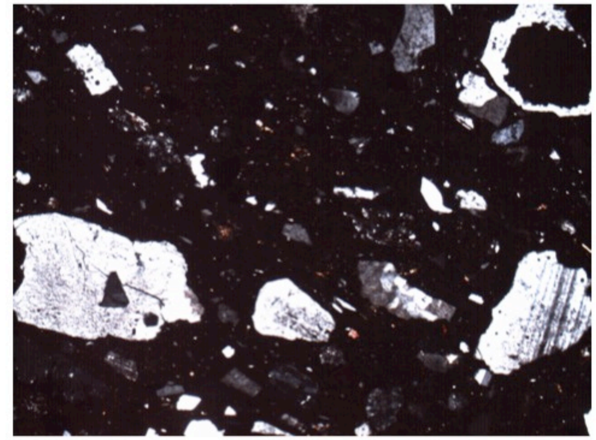
XPL


L2-L12-S-Ce2-56 (9)

L2-2008-S-2



Paste 6b



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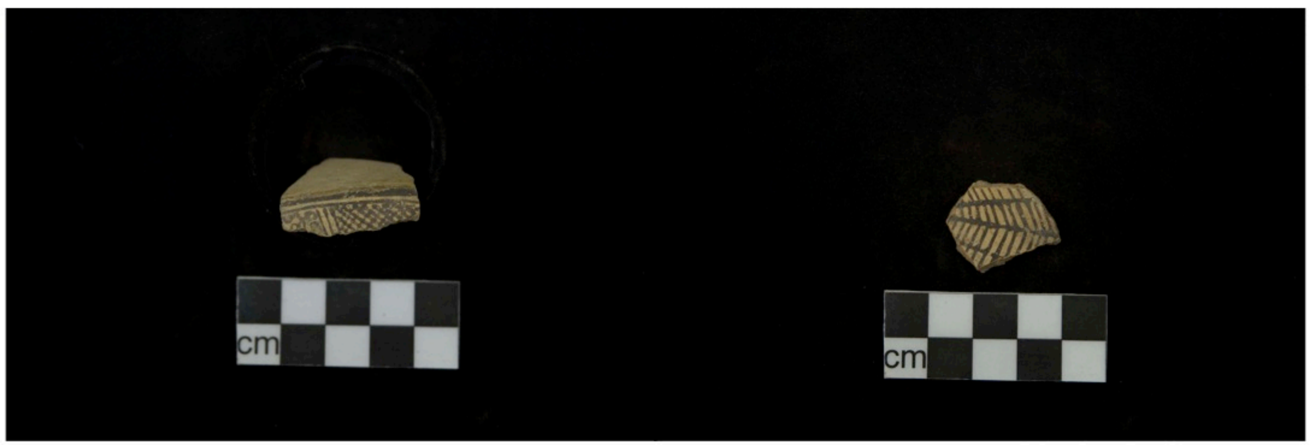
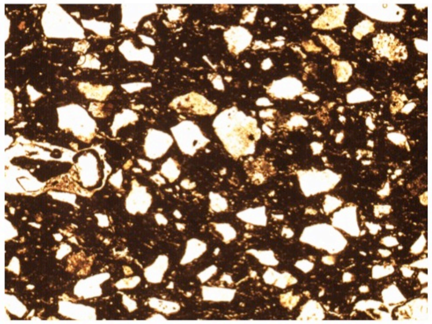
XPL




L2-U5-N1-Ce4-26 (68)

L2-U5-N1-Ce1-1 (57 )

Paste 7



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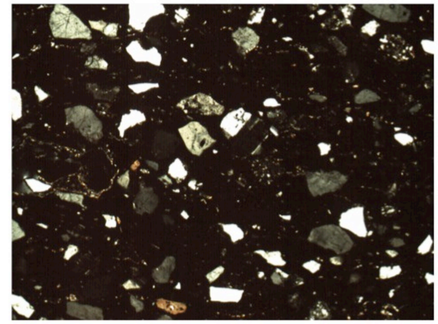


XPL

L2-U3-N5-C8-43 (23)

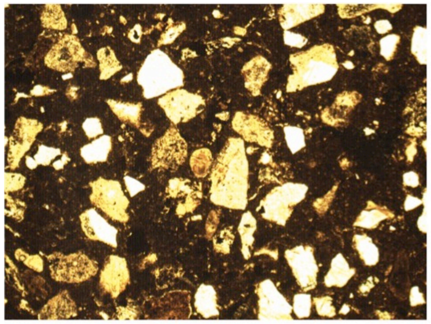
L2-O9-S-CE1-18 (46)

L2-U5-N1-Ce1-11 (55)

L2-U3-N3A-Ce3-3 (12)

L2-U3-N5B-Ce1-3 (52)

L2-U3-N3E-A1-Ce1-8 (65)



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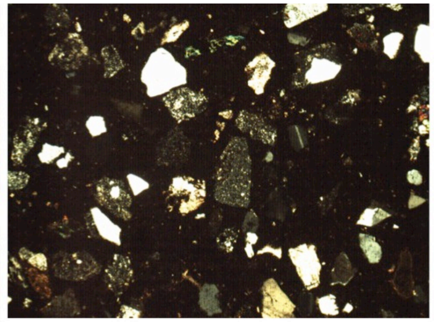


XPL

Paste 7a


A16-C18-157


A15-C23-04

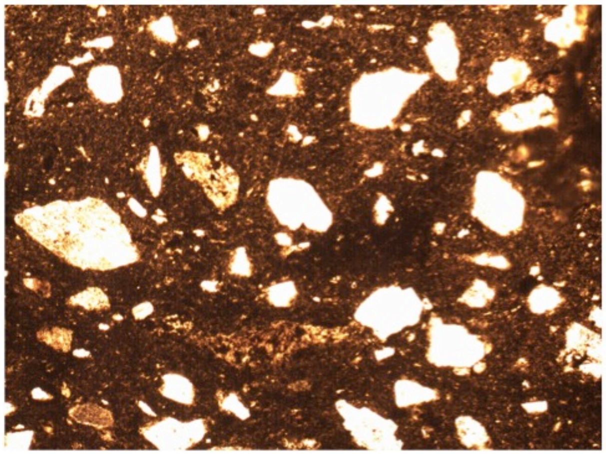

A16-C18-156


A15-C23-01


L2-2008-S-3


L2-2008-S-1


L2-2008-S-4



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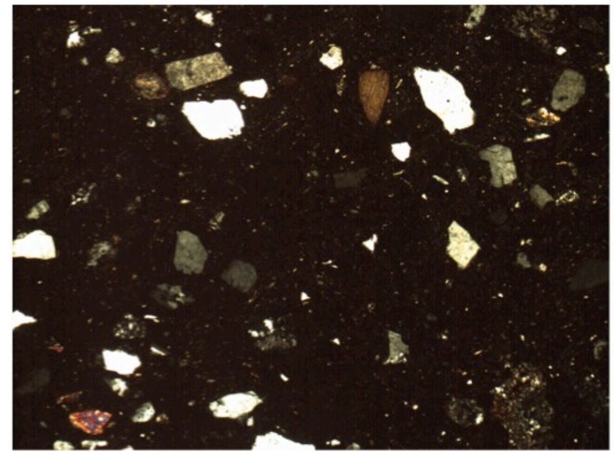

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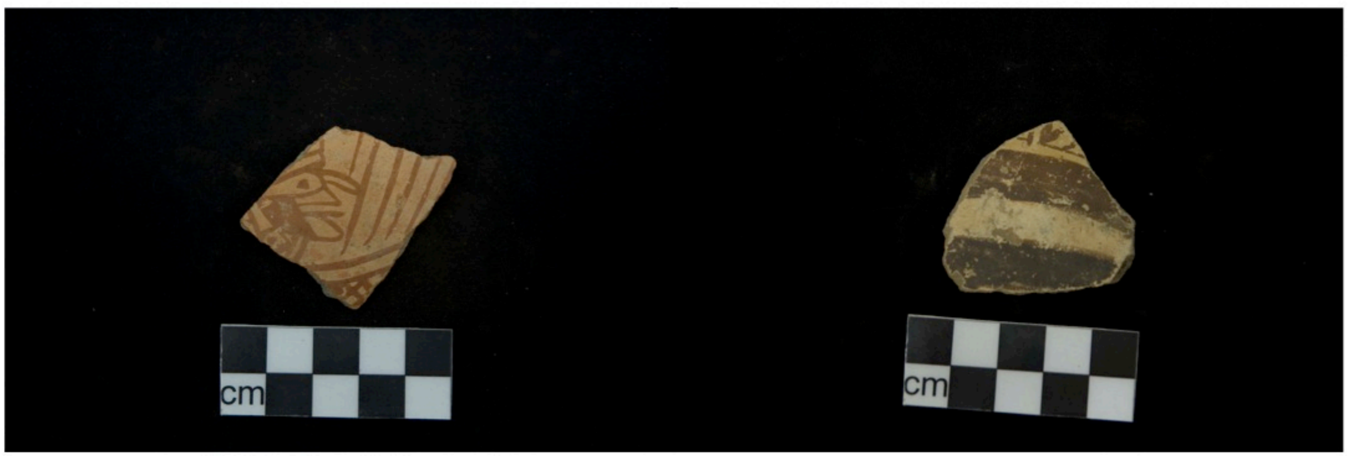
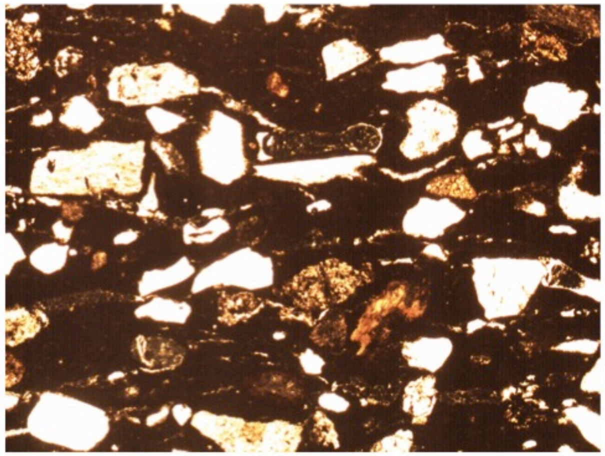



A16-C18-148

L2-U3-CN-N2-Ce3-2

Paste 7c



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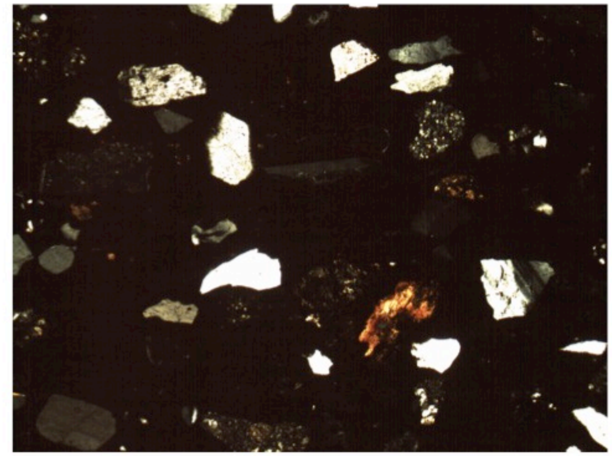
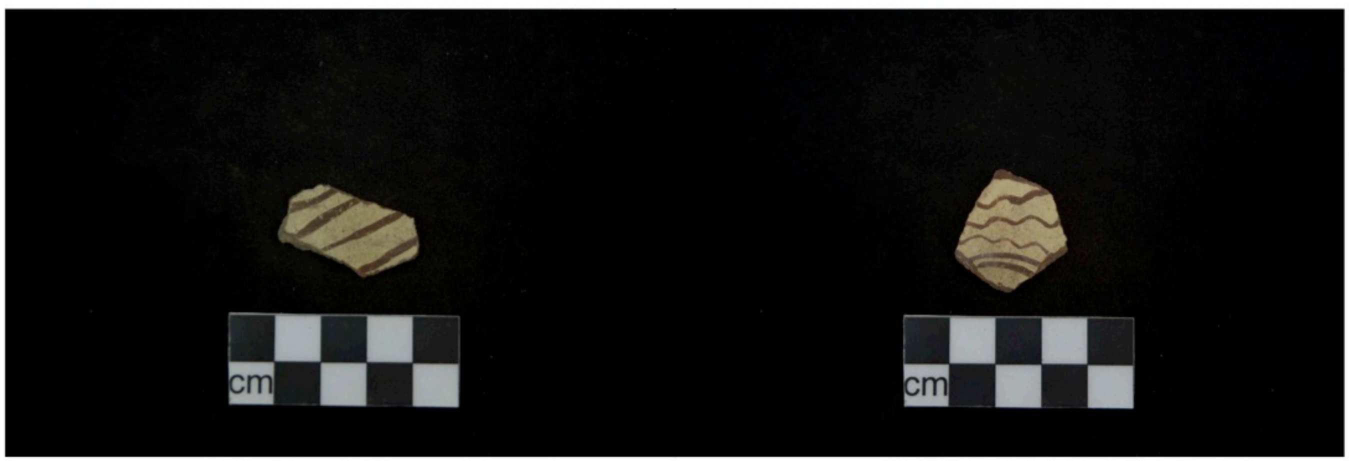


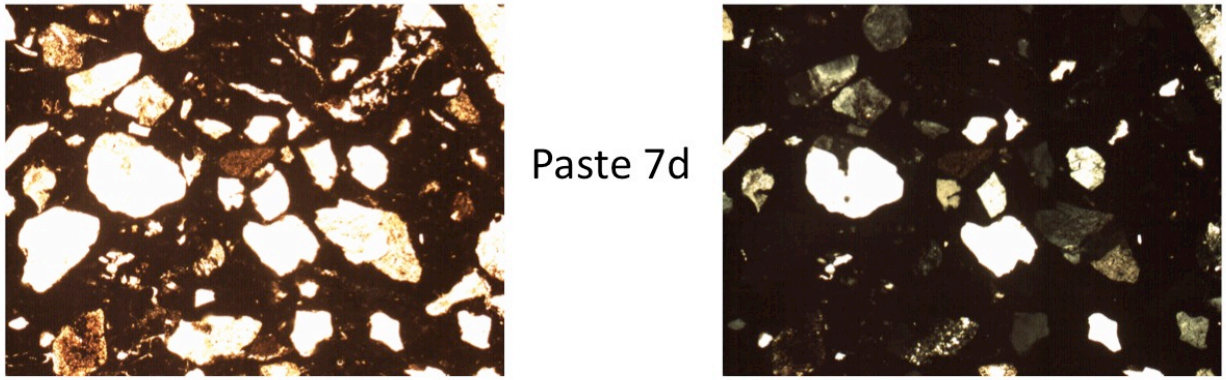
XPL




A16-C18-158

A16-C19-7

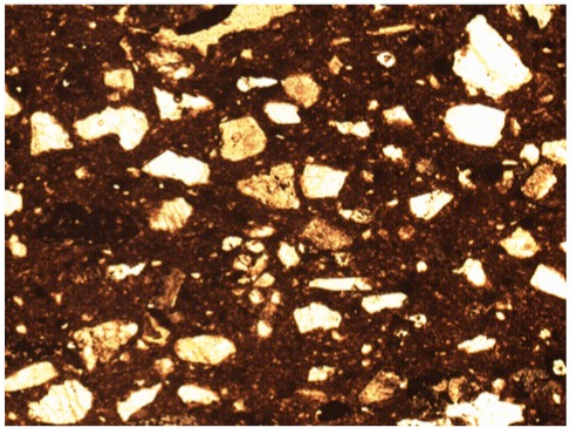
Paste 7d



PPL XPL


EBM4 EBM13 L2-U3-N3C-Ce1-20 (6)

Paste 8



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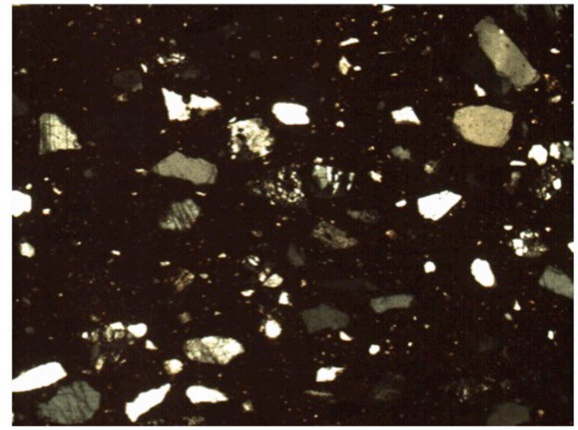
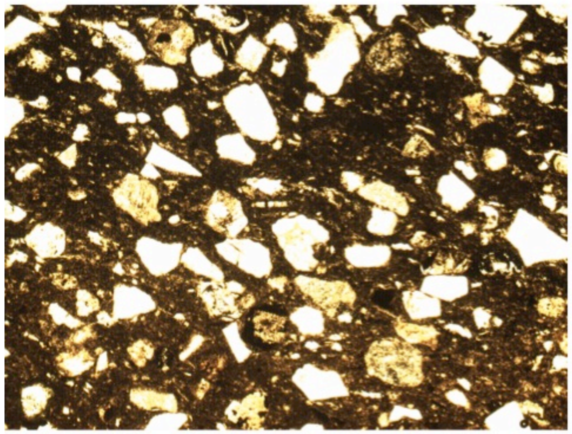


XPL


L2-U3-N5-Ce6-1 (15)

Paste 9



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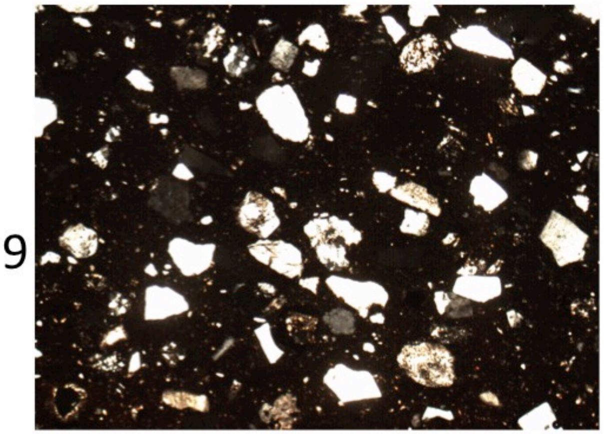

XPL


EBM20

EBM5

## APPENDIX C

Radiocarbon dates from eighteen Moche sites (Supplement to Chapter 8)

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|
| **PAMPA GRANDE (LAMBAYEQUE VALLEY) (Shimada 1994)** | | | | | | | | |
| Charred cotton, floor of burnt platform mound in rectangular enclosure (Unit 16); Moche V | Moche V | SMU-644 | 1250 ± 50 | 688<br>914 | 904<br>970 | 83.5<br>11.9 | 831 | |
| Burnt wooden post atop platform mound (Huaca 18), Sector H, Moche V | Moche V | A-1704 | 1280 ± 70 | 663<br>915 | 903<br>968 | 86.8<br>8.6 | 802 | |
| Charred cotton, floor of elite compound ("Deer House"; Unit 14; Moche V | Moche V | SMU-399 | 1300 ± 60 | 660<br>925 | 895<br>936 | 94.2<br>1.2 | 777 | |
| Burnt cane, roof of Spondylus workshop, rectangular compound (Unit 15); Moche V | Moche V | SMU-682 | 1380 ± 40 | 640 | 778 | 95.4 | 696 | |
| carbonized corn kernels in an urn placed in the floor of Structure 43, Unit 45, Sector H; Moche V | Moche V | A-1705 | 1380 ± 70 | 600 | 880 | 95.4 | 711 | not corrected for C=12/13 fractionation |
| **SIPAN (LAMBAYEQUE VALLEY) (Alva 1988:524)** | | | | | | | | |
| Fragment of roofing beams of the burial chamber of the lord of Sipan | Early/Middle Moche | | | | | | ~AD 290* | *14C not given, calibration curve unclear |
| **HUACA DEL PUEBLO BATAN GRANDE (LA LECHE VALLEY) (Shimada 1994)** | | | | | | | | |
| Charcoal from buried, discolored, and sooted vessel near the top of Stratum XII; Moche V | Moche V | SMU-876 | 1410 ± 60 | 561<br>790 | 782<br>810 | 94<br>1.4 | 675 | |
| Charcoal from fire pit in the sandy Stratum XII, Level D/E; Moche V | Moche V | SMU-901 | 1430 ± 60 | 556 | 776 | 95.4 | 656 | |
| Trench 1/2-'79 charcoal from fire pit near sterile sand, Stratum XII, Leven N; associated with Moche IV ceramics | Moche IV | SMU-873 | 1540 ± 60 | 432 | 654 | 95.4 | 572 | |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|

**HUACA SOLEDAD (LA LECHE VALLEY) (Shimada 1994)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Charcoal from "protective organic layer" covering Phase I construction, Mound II; associated with Moche V (?) burnished blackware bowl fragments | Moche V? | SMU-833 | 1410 ± 60 | 561<br>790 | 782<br>810 | 94<br>1.4 | 675 | |
| Charcoal from a fire pit, Test Pit 3, Cut A, Southern Cemetery stratigraphy pre-Moche IV intrusion and associated with Late Gallinazo Ceramics | Pre-Moche IV | SMU-897 | 1570 ±40 | 432 | 631 | 95.4 | 551 | |

**DOS CABEZAS (JEQUETEPEQUE VALLEY) (Donnan 2007)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Early phase tombs of Dos Cabezas* | | | | | | | | |
| Sample3: burned textiles in the offering above the roof of Tomb B | Early Moche | Beta-89550 | 1540 ± 50 | 433<br>505 | 495<br>654 | 14.1<br>81.3 | 577 | |
| Sample1: used fragments of textiles that were wrapped around the copper figure on top of the roof beams of Tomb A | Early Moche | Beta-219770 | 1570 ± 40 | 432 | 631 | 95.4 | 551 | |
| Sample2: used fragments of textiles that were wrapped around the copper figure on top of the roof beams of Tomb A | Early Moche | Beta-219771 | 1660 ± 40 | 347<br>379 | 369<br>559 | 2.6<br>92.8 | 468 | Note: Severe flooding occurred between the construction of these tombs |
| *Late phase tombs of Dos Cabezas* | | | | | | | | |
| Sample4: part of desiccated brain found in the cranial vault of the principal individual of Tomb 2 | Early Moche | Beta-129542 | 1530 ± 60 | 433<br>502 | 497<br>659 | 14.6<br>80.8 | 580 | |
| Sample5: fragment of a textile from the funerary bundle of Tomb 2 | Early Moche | Beta-129543 | 1580 ± 50 | 425 | 636 | 95.4 | 536 | |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|

**SAN JOSE DE MORO (JEQUETEPEQUE VALLEY) (Courtesy of Luis Jaime Castillo)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| A35-MU1610-Md02, charred wood, early transitional period tomb | Early Transitional | AA94825 | 1186 ± 34 | 782<br>810 | 790<br>989 | 1.6<br>93.8 | 923 | |
| A35-MU1610-Mu01, charred wood, early transitional period tomb | Early Transitional | AA94824 | 1205 ± 34 | 779<br>801 | 794<br>980 | 5.1<br>90.3 | 894 | |
| A46-MU1727B(N2)-Og01, charred gourd, Late Moche tomb | Late Moche | AA94826 | 1220 ± 34 | 775 | 975 | 95.4 | 869 | |
| A46-Mu1727B(N3)-Mu05, charred wood, Late Moche tomb | Late Moche | AA94827 | 1292 ± 35 | 685 | 882 | 95.4 | 779 | |

**El BRUJO (CHICAMA VALLEY) (Courtesy of Jeffrey Quilter; Franco et al. 2003; Quilter et al. 2012; Denis Vargas, personal communication)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Collagen, Sacrifice, Huaca E Base | Moche IV | Beta-208629 | 1370 ± 40 | 644<br>794 | 780<br>801 | 94.8<br>0.6 | 705 | |
| Charred material, ritual fire above Sra. Tomb | Moche III | Beta-230123 | 1420 ± 50 | 585 | 773 | 95.4 | 663 | |
| Caña brava, Phase A (Huaca 4), | Moche IV | OxA-6896 | 1480 ± 40 | 556 | 667 | 95.4 | 622 | |
| Plant remains, Phase D | Moche I/II | Beta-109132 | 1530 ± 60 | 433<br>502 | 497<br>659 | 14.6<br>80.8 | 580 | |
| Collagen, Sacrifice, Patio C, Offering 1 | Moche I/II | Beta-208630* | 1540 ± 50 | 433<br>505 | 495<br>654 | 14.1<br>81.3 | 577 | |
| Cotton, Unprocessed, from Sra. Wrapping | Moche I/II | Beta-212819 | 1550 ± 40 | 435<br>509<br>528 | 491<br>518<br>647 | 13.4<br>1.6<br>80.5 | 572 | |
| Plant, Sacrificial rope, girl, next to Sra. | Moche I/II | Beta-208632 | 1580 ± 40 | 427 | 620 | 95.4 | 539 | |
| Plant, mat from Sra. | Moche I/II | Beta-230124 | 1580 ± 50 | 425 | 636 | 95.4 | 536 | |
| Plant, Upper section of Huaca front | ? | Beta-230125 | 1590 ± 50 | 418 | 631 | 95.4 | 521 | |
| JQ-6: Gourd from the north east patio of Building E | Moche I/II? | UCIAMS-102539 | 1605 ± 15 | 430 | 565 | 95.4 | 490 | |
| JQ-1: Carbonized vegetal remains from Capa B, Level 1 of the ceremonial well | Moche III/IV | UCIAMS-102535 | 1615 ± 15 | 429 | 553 | 95.4 | 485 | |
| JQ-3: Matting from Tomb 2 (Tomb in the same room as the Señora) | Moche I/II | UCIAMS-102537 | 1615 ± 15 | 429 | 553 | 95.4 | 485 | |
| JQ-4: Matting from Tomb 3 (Señora de Cao) | Moche I/II | UCIAMS-102538 | 1625 ± 15 | 426 | 546 | 95.4 | 484 | |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|
| **EL BRUJO CONT.** JQ-2: Soil (unclear what was dated) from Tomb 1/05 (Tomb in same room as the Señora de Cao) | Moche I/II | UCIAMS-102536 | 1645 ± 15 | 421 | 538 | 95.4 | 485 | |
| Paint (vegetal carbon) Phase F (Huaca 2) | Moche I/II | OxA-7008 | 1650 ± 65 | 261<br>325 | 280<br>606 | 1.8<br>93.6 | 469 | |
| Caña de guayaquil, Phase F (Huaca 2) | Moche I/II | OxA-7006 | 1670 ± 65 | 258<br>318 | 299<br>590 | 5.2<br>90.2 | 448 | |
| Caña brava, Phase D (Huaca 2+) | Moche I/II | OxA-7005 | 1675 ± 70 | 256 | 591 | 95.4 | 440 | |
| Wood, Upper Terrace | Moche III | Beta-230126 | 1730 ± 50 | 243<br>483 | 465<br>533 | 87.4<br>8 | 368 | |
| Plant, Sacrificial rope, child, T.1, Sra. Group | Moche I/II | Beta-208631 | 1750 ± 40 | 239 | 430 | 95.4 | 348 | |
| Textile, Threads from Sra. Wrapping | Moche I/II | Beta-212820 | 1760 ± 40 | 238 | 425 | 95.4 | 338 | |
| Caña de guayaquil, Phase D (Huaca 2+) | Moche I/II | OxA-7007 | 1865 ± 80 | 29<br>50 | 39<br>408 | 0.7<br>94.7 | 213 | |

**CERRO MAYAL (CHICAMA VALLEY) (Russell et al. 1998)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Charred wood, hearth, near surface, post-dates Moche occupation | Moche IV | Beta-71084 | 1200 ± 50 | 724<br>771 | 739<br>994 | 1.2<br>94.2 | 894 | |
| Charred wood, hearth | Moche IV | Beta-71082 | 1210 ± 50 | 721<br>770 | 741<br>990 | 2.2<br>93.2 | 881 | |
| Charred wood, hearth | Moche IV | Beta-71085 | 1280 ± 50 | 671<br>923 | 897<br>940 | 93.2<br>2.2 | 799 | Same sample as DRI2858 |
| Charred wood, kiln | Moche IV | Beta-71081 | 1320 ± 50 | 663 | 879 | 95.4 | 750 | Same sample as DRI2857 |
| Charred wood, production debris | Moche IV | Beta-71079 | 1330 ± 50 | 659 | 872 | 95.4 | 743 | |
| Charred wood, hearth | Moche IV | DRI2858 | 1365 ± 46 | 642<br>843 | 821<br>860 | 94<br>1.4 | 713 | |
| Charred wood, production ash | Moche IV | Beta-71080 | 1390 ± 50 | 603<br>792 | 781<br>806 | 94.2<br>1.2 | 691 | |
| Charred wood, hearth, bottom of the site on sterile | Moche IV | Beta-71083 | 1450 ± 50 | 554<br>747 | 710<br>766 | 92.4<br>3 | 640 | |
| Charred wood, kiln | Moche IV | DRI2857 | 1491 ± 52 | 443<br>462<br>533 | 451<br>484<br>682 | 0.5<br>1.5<br>93.4 | 612 | |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|

**LICAPA II (CHICAMA VALLEY)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| L2-U3-N4-R4-O4, seed charcoal, from cuy pen, unit 3 | Moche IV/V | AA94812 | 1242 ± 36 | 712<br>767<br>915 | 746<br>904<br>967 | 5.2<br>79.9<br>10.3 | 839 | |
| L2-U3-N3D-RA-O1, small stick charcoal, from hearth south of cuy pen, unit 3 | Moche IV/V | AA94814 | 1256 ± 36 | 690<br>762<br>920 | 750<br>899<br>945 | 11.9<br>79.8<br>3.7 | 826 | |
| L2-U4-5PR-01, charred wood, between floors 5 and 5B, unit 4 | Moche IV/V | Beta-302520 | 1280 ± 30 | 690<br>762 | 751<br>886 | 24.2<br>71.2 | 800 | |
| L2-U3-N5C-O2-1, charred seed, fire pit associated with floor 5C, unit 3 | Moche IV/V | AA94815 | 1329 ± 37 | 661<br>837 | 829<br>866 | 90.9<br>4.5 | 735 | |
| L2-U3-N6-03, charred seed, from around a jar on sterile, unit 3 | Moche IV/V | Beta-302518 | 1370 ± 30 | 654 | 772 | 95.4 | 699 | Same context as AA94813 |
| L2-U3-N5C-O2-2, charred seed, fire pit associated with floor 5C, unit 3 | Moche IV/V | AA94816 | 1381 ± 37 | 646 | 774 | 95.4 | 692 | |
| L2-U3-N6-Fg1-O1, charred wood, fire pit associated with floor 6, unit 3 | Moche IV/V | AA94817 | 1382 ± 37 | 645 | 774 | 95.4 | 691 | |
| L2-U2-N3-02, charred seed, fire pit associated with adobe floor, level 3, unit 2 | Licapa II | Beta-302516 | 1390 ± 30 | 645<br>740 | 724<br>771 | 77.5<br>17.9 | 679 | Same context as AA94811 |
| L2-U1-N4B-01, wood, wood feature on low terrace of first building, west façade Huaca A | Moche IV/V | Beta-302515 | 1390 ± 30 | 645<br>740 | 724<br>771 | 77.5<br>17.9 | 679 | Same sample as AA94804 |
| L2-U4-N5C-O1, small stick charcoal, floor 5C, unit 4 | Moche IV/V | AA94821 | 1406 ± 35 | 615<br>741 | 723<br>770 | 83.2<br>12.2 | 669 | |
| L2-U3-N7-O4, charred wood, from fire pit just below floor 6, unit 3 | Moche IV/V | AA94818 | 1411 ± 34 | 611<br>743 | 718<br>769 | 86<br>9.4 | 666 | |
| L2-U4-N5B-O1, charred wood, floor 5B, unit 4 | Moche IV/V | AA94823 | 1437 ± 34 | 590<br>750 | 692<br>763 | 93.9<br>1.5 | 650 | |
| L2-U1-N4B-O1, wood, wood feature on low terrace of first building, west façade Huaca A | Licapa II | AA94804 | 1453 ± 36 | 575 | 680 | 95.4 | 639 | |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|
| **LICAPA II CONT.** L2-U2-SN10-T1-01, charred corn cob, inside ceramic basin on top of burial in tomb 1, unit 2 | Licapa II | Beta-302517 | 1460 ± 30 | 583 | 670 | 95.4 | 637 | Same sample as AA94807 |
| L2-U4-N7-02, charred corn cob, on sterile sand, associated adobe wall but no floor, unit 4 | Moche IV | Beta-302519 | 1470 ± 30 | 576 | 665 | 95.4 | 630 | Same sample as AA94819 |
| L2-U2-N1-O2-1, charred bone or reed, offering associated with tomb 1, unit 2 | Licapa II | AA94809 | 1478 ± 45 | 546 | 673 | 95.4 | 622 | |
| L2-U2-N3-O1, charred corn cob, fire pit associated with adobe floor, level 3, unit 2 | Licapa II | AA94811 | 1489 ± 36 | 559 | 661 | 95.4 | 619 | |
| L2-U2-N7E-O1, charred wood, floor 7E, unit 2 | Licapa II | AA94808 | 1506 ± 36 | 546 | 655 | 95.4 | 609 | |
| L2-U2-S.ext-N10-T1-O1, charred corn cob, inside ceramic basin on top of burial in tomb 1, unit 2 | Licapa II | AA94807 | 1512 ± 35 | 544 | 654 | 95.4 | 605 | |
| L2-U2-N4E-O4, charred seed, floor 4A, unit 2 | Licapa II | AA94805 | 1526 ± 36 | 468<br>534 | 481<br>655 | 1.3<br>94.1 | 594 | |
| L2-U2-N1-O2-2, burnt textile, offering associated with tomb 1, unit 2 | Licapa II | AA94810 | 1529 ± 38 | 442<br>460<br>532 | 453<br>485<br>655 | 1.1<br>2.8<br>91.5 | 591 | |
| L2-U3-N6-O1, small stick charcoal, from around a jar on sterile, unit 3 | Moche IV/V | AA94813 | 1531 ± 36 | 444<br>463<br>533 | 450<br>484<br>654 | 0.6<br>2.3<br>92.5 | 590 | |
| L2-U4-N7-O2-1, charred corn cob, on sterile sand, associated adobe wall but no floor, unit 4 | Moche IV | AA94819 | 1572 ± 35 | 431 | 622 | 95.4 | 551 | |
| L2-U2-N4E-O3, charred wood, floor 4C, unit 2 | Licapa II | AA94806 | 1579 ± 37 | 428 | 615 | 95.4 | 542 | |
| L2-U4-N7-O2-2, charred seed, on sterile sand, associated adobe wall but no floor, unit 4 | Moche IV | AA94820 | 1624 ± 35 | 411 | 576 | 95.4 | 489 | |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|

**HUACAS DE MOCHE (MOCHE VALLEY) (Chapdelaine 2001; Uceda et al. 2001; Uceda et al. 2007)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Huaca de la Luna* | | | | | | | | |
| Charcoal (reed), reed mat between building stages A and B of platform I | Moche IV | Beta-96034 | 1380 ± 70 | 600 | 880 | 95.4 | 711 | |
| Wood, post from the roof of a burial chamber in platform II | Moche IV | Beta-96035 | 1470 ± 80 | 433<br>503 | 495<br>774 | 7.1<br>88.3 | 622 | |
| Charcoal (reed), Tomb II Inside the fill of adobes that covered Structure B/C | Moche IV | Gif-9530 | 1540 ± 50 | 433<br>505 | 495<br>654 | 14.1<br>81.3 | 577 | |
| Wood, post of algarrobo from a the patio of reliefs, Structure A | Moche IV | Gif-9529 | 1640 ± 40 | 390 | 572 | 95.4 | 482 | |
| Fly pupas, Elements associated with the remains of the sacrifices from under the floor of plaza 3C, Structure C or D | Moche III | Beta-158975 | 1810 ± 40 | 139<br>208 | 198<br>393 | 9.6<br>85.8 | 288 | |
| Reed (totora or Enea) Rope to tie the prisoners from below the floor of plaza 3C, Structure C or D | Moche III | Beta-158974 | 1880 ± 40 | 79<br>282 | 260<br>324 | 88.1<br>7.3 | 188 | |
| *Uhle Platform* | | | | | | | | |
| Charcoal, central fire of the Uhle platform. Final occupation of the building | | Gif-11575 | 1340 ± 30 | 658<br>792 | 780<br>805 | 93.7<br>1.7 | 723 | |
| Bone, small staircase at the foot of the huaca, space that separates the Huaca de la Luna and the Uhle Platform | | Beta-1568907 | 1420 ± 50 | 585 | 773 | 95.4 | 663 | |
| Charcoal, associated with tomb 4 of the Uhle platform where there were Moche IV and V ceramics | Moche IV and V | Gif-11577 | 1495 ± 50 | 465<br>533 | 483<br>676 | 1.3<br>94.1 | 610 | |
| Charcoal, associated with miniature ceramic under the floor of the Uhle Platform, last construction | Moche IV | Gif-11576 | 1620 ± 35 | 414 | 578 | 95.4 | 490 | |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|

**HUACAS DE MOCHE CONT.**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Urban Zone* | | | | | | | | |
| Charcoal, floor 1, hearth CA # 15-3, 15cm below surface | Moche IV | Beta-96027 | 1280 ± 60 | 666<br>918 | 900<br>961 | 89.8<br>5.6 | 800 | |
| Charcoal, floor 1, CA #8-1, 20 cm below surface | Moche IV | Beta-124995 | 1290 ± 60 | 662<br>920 | 899<br>945 | 92.3<br>3.1 | 789 | |
| Charcoal, between floor 1 and 2, hearth CA# 12-2, 30 cm below surface | Moche IV | Beta-108279 | 1330 ± 60 | 653 | 886 | 95.4 | 748 | |
| Charcoal, floor 1, hearth with adobes, CA# 9-28, 70 cm below surface | Moche IV | Beta-111544 | 1360 ± 60 | 639 | 880 | 95.4 | 725 | |
| Charcoal, floor 1, hearth with adobes, CA # 9-35, 80 cm below surface | Moche IV | Beta-111545 | 1360 ± 70 | 614 | 887 | 95.4 | 730 | |
| Charcoal, fill of floor 1, CA #25-1, 35 cm below surface | Moche IV | Beta-124996 | 1360 ± 60 | 639 | 880 | 95.4 | 725 | |
| Charcoal, floor 1, lens of ash from after rooms abandonment CA #7-13, 40 cm below surface | Moche IV | Beta-84845 | 1370 ± 50 | 635<br>839 | 828<br>864 | 93.2<br>2.2 | 711 | |
| Charcoal, floor 1, hearth without adobes. CA # 9-10, 20 cm below surface | Moche IV | Beta-96029 | 1400 ± 60 | 574<br>788<br>844 | 783<br>814<br>858 | 92.1<br>2.3<br>0.9 | 685 | |
| Charcoal, floor 1, ash from after rooms abandonment CA # 7-10 | Moche IV | Beta-84843 | 1410 ± 60 | 561<br>790 | 782<br>810 | 94<br>1.4 | 675 | |
| Charcoal, floor 2, post in floor CA # 14-1, 60 cm below surface | Moche IV | Beta-96026 | 1430 ± 50 | 572<br>739 | 725<br>771 | 86.9<br>8.5 | 655 | |
| Charcoal, base of chimney, inside chimney CA # 7-14, 104 cm below surface | Moche IV | Beta-96030 | 1480 ± 60 | 438<br>531<br>748 | 488<br>708<br>765 | 3.7<br>90.3<br>1.3 | 617 | |
| Charcoal, between floors 1 and 2, exterior of chimney CA # 7-14, 140 cm below surface | Moche IV | Beta-96031 | 1490 ± 60 | 435<br>508<br>528 | 491<br>519<br>688 | 5.4<br>0.7<br>89.2 | 610 | |
| Charcoal, under floor 7, under tomb CA # 12-5, 180cm below surface | Moche III? | Beta-121764 | 1490 ± 60 | 435<br>508<br>528 | 491<br>519<br>688 | 5.4<br>0.7<br>89.2 | 610 | |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|
| **HUACAS DE MOCHE CONT.** *(Urban Zone)* Charcoal, floor 1, lens of ash from after rooms abandonment, CA # 6-1, 30 cm below the surface | Moche IV | Beta-84846 | 1500 ± 60 | 434<br>507<br>526 | 493<br>520<br>680 | 7.3<br>1.2<br>86.9 | 603 | |
| Charcoal, under floor 6, under tomb CA # 5-2, 200 cm below surface | Moche III | Beta-121763 | 1500 ± 70 | 428 | 689 | 95.4 | 599 | |
| Charcoal, between floor 1 and 2, hearth CA # 12-4, 50 cm below surface | Moche IV | Beta-108280 | 1510 ± 60 | 433<br>505 | 494<br>670 | 9.4<br>86 | 596 | |
| Charcoal, floor 3, bench CA # 8 patio, 70 cm? Below surface | Moche IV | Beta-96033 | 1520 ± 50 | 437<br>513<br>530 | 489<br>516<br>662 | 7.5<br>0.3<br>87.6 | 593 | |
| Charcoal, under floor 5, on top of burial CA #5-24, 310 cm below surface | Moche III | Beta-134086 | 1520 ± 60 | 433<br>504 | 495<br>664 | 11.7<br>83.7 | 588 | |
| Charcoal, floor 2, hearth CA # 9-10, 40 cm below surface | Moche IV | Beta-96028 | 1530 ± 60 | 433<br>502 | 497<br>659 | 14.6<br>80.8 | 580 | |
| Charcoal, between floors 3a and 3b, burial CA # 15, 550 cm below surface | Moche III | Beta-121761 | 1630 ± 40 | 400 | 581 | 95.4 | 487 | |
| Charcoal, floor 1, lens of ash CA # 9-13, 30-40 cm below surface | Moche IV | Beta-96032 | 1640 ± 60 | 336 | 608 | 95.4 | 479 | |
| Charcoal, under floor 7, lens of ash CA # 12-4 | Moche III | Beta-121762 | 1680 ± 60 | 257<br>316 | 302<br>568 | 6.2<br>89.2 | 435 | |

**GALINDO (MOCHE VALLEY) (Lockard 2009)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Huaca de las Abejas A301 (Platform A, SA3, U1 Charcoal from bottom level of adobes | Moche V | AA56787 | 1285 ± 32 | 687 | 885 | 95.4 | 793 | |
| Strat cut 101 Area 103, Unit 1, Maize from Level 17 | Moche V | AA56783 | 1290 ± 34 | 686 | 883 | 95.4 | 782 | |
| Huaca de las Lagartijas A201 (Platform B) SA6, U1 Charcoal from below platform | Moche V | AA56793 | 1319 ± 29 | 668<br>840 | 825<br>862 | 91.9<br>3.5 | 737 | |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|
| **GALINDO CONT.** Huaca de las Abejas A301 (Platform A, SA2, U6 Charcoal from 4th level above base | Moche V | AA56784 | 1322 ± 35 | 665<br>837 | 830<br>866 | 89.9<br>5.5 | 739 | |
| Huaca de las Abejas A301 (Platform A, SA3, U1 Charcoal from3rd level above base | Moche V | AA56986 | 1327 ± 40 | 661 | 868 | 95.4 | 738 | |
| Structure 39 A101, SA1, U1, Feature 1 Maize from Late Moche hearth | Moche V | AA61598 | 1335 ± 36 | 658<br>842 | 823<br>861 | 93<br>2.4 | 730 | |
| Structure 41 A203, SA3, U5, Feature 1 Reed from Late Moche hearth | Moche V | AA61599 | 1341 ± 36 | 656<br>843 | 820<br>859 | 93.9<br>1.5 | 726 | |
| Huaca de las Lagartijas A201 (Platform B) SA6, U1 Charcoal from 3rd level above base | Moche V | AA56792 | 1349 ± 30 | 659 | 777 | 95.4 | 716 | |
| Structure 42 A204, SA3, U3, Feature 3 Maize from late Moche hearth | Moche V | AA61601 | 1358 ± 36 | 650<br>794 | 780<br>801 | 94.7<br>0.7 | 712 | |
| Structure 42 A204, SA1, U4, Feature 2 Maize from late Moche hearth | Moche V | AA61600 | 1360 ± 36 | 650 | 779 | 95.4 | 711 | |
| Strat cut 101 Area 103, Unit 1, Maize from Level 11 | Moche V | AA56782 | 1372 ± 37 | 649 | 775 | 95.4 | 702 | |
| Structure 40, A102, SA1, U1, Feature 2 Maize from late Moche hearth | Moche V | AA61597 | 1373 ± 41 | 640<br>792 | 780<br>805 | 94.4<br>1 | 703 | |
| Huaca de las Abejas A301 (Platform A, SA2, U6 Charcoal from bottom level of unit | Moche V | AA56785 | 1441 ± 40 | 571<br>702<br>748 | 694<br>707<br>765 | 92.6<br>0.5<br>2.3 | 647 | |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|

**HUACA DE LA CRUZ (VIRU VALLEY) (Shimada 1994; Strong and Evans 1952)**

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|
| Fragment of textile associated with burial 3 | Moche IV | L-335A | 1300 ± 80 | 651<br>913 | 905<br>971 | 87.6<br>7.8 | 785 | Not sure when these samples were dated. May have been very early on in Radiocarbon technology |
| Fragment of basket associated with burial 10 | Moche IV | L-335B | 1300 ± 80 | 651<br>913 | 905<br>971 | 87.6<br>7.8 | 785 | |

**SANTA RITA B (CHAO VALLEY) (Kent et al. 2009)**

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|
| Organic material from between sacrifice burials 2 and 3. Burial 2 had a Moche III or IV mold-made bowl | Moche III/IV | Beta-198388 | 1290 ± 50 | 666<br>927 | 895<br>934 | 94.7<br>0.7 | 786 | |
| Carbon and ash concentration mixed with Gallinazo and undecorated, possibly Moche domestic pottery | Moche? | Beta-198387 | 1470 ± 80 | 433<br>503 | 495<br>774 | 7.1<br>88.3 | 622 | |

**GUADALUPITO (SANTA VALLEY) (Chapdelaine 2010)**

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|
| 2002-G112-2: Maize cob, C#1, R-5, between floors 1 and 2, last compound built | Moche IV | TO-10581 | 1340 ± 60 | 650 | 883 | 95.4 | 741 | |
| 2002-G112-6: Maize cob, C#6, R-2a, between floors 2 and 3, Southeastern compound | Moche IV | TO-10585 | 1350 ± 50 | 649 | 868 | 95.4 | 727 | |
| 2002-G112-1: Maize cob, C#4,northwestern bench, last modification | Moche IV | TO-10580 | 1360 ± 60 | 639 | 880 | 95.4 | 725 | |
| 2002-G112-5: Maize cob, C#3, R-2, between floors 2 and 3, ceramicist compound? | Moche IV | TO-10584 | 1390 ±60 | 596<br>838 | 828<br>865 | 93.1<br>2.3 | 697 | |
| 2002-G112-4: Maize cob, C#5, R-10, below floor 2b, below first construction phase | ? | TO-10583 | 1490 ± 60 | 435<br>508<br>528 | 491<br>519<br>688 | 5.4<br>0.7<br>89.2 | 610 | *Below first construction level at the site |
| 2002-G112-3: Maize cob, C#4, northwestern bench, between last floor and bedrock | ? | TO-10582 | 1610 ± 50 | 401 | 612 | 95.4 | 500 | *Between floor and bedrock |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|
| **EL CASTILLO (SANTA VALLEY) (Chapdelaine 2010)** | | | | | | | | |
| 2001-EC-3, maize, C#2, R-5, floor 1 | Moche III? | TO-9744 | 1420 ± 50 | 585 | 773 | 95.4 | 663 | Unclear why this is Moche III, no ceramics |
| 2001-EC-1, charcoal, C#2, hearth on floor 8 | Moche III? | TO-9742 | 1480 ± 50 | 535 | 688 | 95.4 | 619 | Unclear why this is Moche III, no ceramics |
| 2002-ECH-1, maize cob, Huaca, northeastern corner, R-5, between floors 1 and 2 | Moche | TO-10591 | 1530 ± 50 | 435<br>509<br>528 | 491<br>518<br>657 | 10.4<br>1.3<br>83.8 | 585 | Unclear what the evidence is that this is from a Moche context |
| 2002-ECE-1, maize cob, Plaza, F3, between floor 3a and 3b | Moche | TO-10587 | 1560 ± 50 | 432 | 643 | 95.4 | 558 | Unclear what the evidence is that this is from a Moche context |
| 2001-EC-2, maize,, C#2, R-5, floor 11 | Moche III? | TO-9743 | 1600 ± 50 | 409 | 619 | 95.4 | 510 | Unclear why this is Moche III, no ceramics |
| 2002-ECH-2, maize cob, Huaca eastern side, R-5, between floors 2 and 3 | Moche | TO-10592 | 1670 ± 50 | 263<br>329 | 277<br>565 | 1.5<br>93.9 | 453 | Unclear what the evidence is that this is from a Moche context |
| **SITES IN THE SANTA THAT ARE SAID TO BE MOCHE (Chapelaine 2010)** | | | | | | | | |
| 2001-G-121: Maize, C#1, floor 2, walled enclosure site | Moche | TO-9736 | 1210 ± 50 | 721<br>770 | 741<br>990 | 2.2<br>93.2 | 881 | |
| 2002-G-88-1: Charcoal, Hearth in central sector, ceramic production site | Moche | TO-10579 | 1250 ± 60 | 686 | 974 | 95.4 | 831 | |
| 2001-G-192: Charcoal, C#4, hearth, large feature *not a typo, both samples have same no. | Moche | TO-9738 | 1360 ± 60 | 639 | 880 | 95.4 | 725 | |
| 2001-G-192: Maize, C#1, floor 2, under the earliest floor | Moche | TO-9737 | 1540 80 | 401 | 677 | 95.4 | 563 | *Under earliest floor |

| Material and Cultural Context | Phase | Lab No. | 14C ± | ShCal04 FROM (AD) | ShCal04 TO (AD) | % | Median | Notes |
|---|---|---|---|---|---|---|---|---|

Other sites with some 14C data relevant to Moche occupations:

**PACATNAMU (Shimada 1994)**

| |
|---|
| Three different charcoal samples taken each from over a square yard from a deep layer at the northwest corner of Huaca 31 mound; a "period when Mochica and Gallinazo potter was used concurrently as grave offering" (Ubbelohde-Doering 1967:22); associated cemetery contains Moche II, IV and V burials (in old scheme), Heidelberg University, $^{14}C$ = 1465 ± 50-100 |

**HUANCACO (VIRU VALLEY) (Bourget 2010)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| no sample information given, early looking spouts (Moche I/II) but Bourget claims it is not Moche site but local and has Moche influences. | Not Moche site | | | 550 | 700 | | | Calibration curve unclear and sample information unknown |

**HUACA SANTA CLARA (VIRU VALLEY) (Millaire 2010)**

| |
|---|
| Some ceramics with Moche IV characteristics, but Millaire claims it is not a Moche site. The people residing at Huaca Santa Clara may have been influenced by Moche ideology during the later occupation of the site (500-700 A.D.) |

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